

ENVIRONMENTAL ASSESSMENT
and
"NATIONWIDE" SECTION 4(f) EVALUATIONS

TOWNSEND-SOUTH
(U.S. Highway 287)
PROJECT NH-F 8-4(16) 78; CN 1420

BROADWATER COUNTY, MONTANA

This document is prepared in conformance with the *Montana Environmental Policy Act (MEPA)* requirements and contains the information required for an Environmental Assessment under the provisions of ARM 18.2.237(2) and 18.2.239. It is also prepared in conformance with the *National Environmental Policy Act (NEPA)* requirements for an Environmental Assessment under 23 CFR 771.119 and *Section 4(f)* of the *U.S. DEPARTMENT OF TRANSPORTATION Act* under 23 CFR 771.135.

Submitted pursuant to:

**42 U.S.C. 4332(2)(c), 49 U.S.C. 303 and
Sections 2-3-104, 75-1-201, M.C.A.**

by the

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

and the

MONTANA DEPARTMENT OF TRANSPORTATION

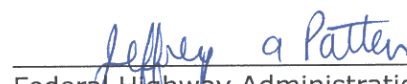
Submitted by:



Montana Department of Transportation
Environmental Services Bureau

Date: 9/29/2005

Reviewed & Approved for
Distribution:



Federal Highway Administration

Date: Oct 6, 2005

Acronyms and Abbreviations Used in the EA

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
ARM	Administrative Rules of Montana
AST	Above ground storage tanks
ATR	Automatic Traffic Recorder
ATS	Average Travel Speed
BLM....	U.S. Department of the Interior Bureau of Land Management
BOR.....	U.S. Department of the Interior Bureau of Reclamation
BRR.....	Biological Resources Report
BA.....	Biological Assessment
BMP.....	best management practices
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COE.....	U.S. Army Corps of Engineers
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibels
DNRC.....	Montana Department of Natural Resources and Conservation
DHV	design hourly volume
EA	Environmental Assessment
EASLs	Equivalent Single Axle Loads
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EO	Executive Order
ESA	Endangered Species Act
FAS	Fishing Access Site
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM.....	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
ha	hectare
HCM 2000	Highway Capacity Manual 2000
MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Fish, Wildlife & Parks
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MNHP	Montana Natural Heritage Program
MVMT	million vehicle miles traveled
MRL.....	Montana Rail Link Railroad
MUTCD	Manual on Uniform Traffic Control Devices
MPDES.....	Montana Pollutant Discharge Elimination System
NAAQS.....	National Ambient Air Quality Standards

NAC	Noise Abatement Criteria
NHS	National Highway System
NPL	National Priority List
km	kilometers
NRCS.....	U.S. Department of Agriculture Natural Resources Conservation Service
NRHP.....	National Register of Historic Places
NRIS	Natural Resource Information System
PL	Public Law
PTSF.....	percent time spent following
PTW	presently traveled way
RCRA.....	Resource Recovery and Conservation Act
RP	Reference Post
SHPO.....	Montana State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
TMDL.....	total maximum daily load
TNM	Traffic Noise Model
USC.....	United States Code
USFS	United States Forest Service
USFWS	U.S. Department of the Interior Fish and Wildlife Service
UST	Underground Storage Tank
VMT	vehicle miles traveled

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SUMMARY OF THE ENVIRONMENTAL ASSESSMENT

Summary of the Environmental Assessment

This Environmental Assessment (EA) examines the environmental effects of rebuilding a portion of U.S. Highway 287 south of Townsend. The EA identifies why this road segment needs to be rebuilt; discusses the range of alternatives considered; discloses the potential environmental impacts of the Preferred Alternative and the No Action Alternative; and describes measures that will be implemented to mitigate the adverse effects the proposed highway project.

PROPOSED ACTION

The Montana Department of Transportation (MDT), together with the Federal Highway Administration (FHWA), proposes to rebuild 13.2 kilometers (8.2 miles) of U.S. Highway 287 south of Townsend in Broadwater County. The proposed project, designated as the "Townsend-South" project, begins at the south city limits of Townsend near reference point (RP) 78.1 and ends north of Toston at RP 86.3.

The Townsend-South project would reconstruct the existing two-lane highway to meet MDT's current standards for Rural Principal Arterials included on the National Highway System (NHS) in Montana. The proposed project would provide a new two-lane highway at least 12.0 m (40 foot) wide to replace the existing 9.1 m (30 foot) wide road. Additional road widening would occur to provide left turn lanes and three four-lane passing areas for northbound and southbound motorists. PART 1.0 of the EA provides a general description of the project and contains maps showing its location. PART 3.0 discusses specific features and associated elements of the proposed project.

PURPOSE AND NEED FOR ACTION

The purpose of the proposed action is to enhance traffic operations and safety within the corridor and to improve the physical condition of the highway. Rebuilding the roadway is needed to bring this section of U.S. Highway 287 up to the geometric design standards applicable to this NHS route.

The existing roadway is nearly 65 years old and many of its associated features do not comply with MDT's current geometric design standards. Most notably, the width of the road does not meet the minimum paved roadway width of 12.0 m (40 feet) for Rural Principal Arterials with similar traffic volumes. The highway also has numerous areas with substandard roadside slopes. The recent accident history for the corridor verifies the need for eliminating substandard roadside fill slopes. Twenty percent of the 93 reported crashes in the project corridor during

a recent ten-year period included vehicles that overturned after leaving the roadway surface. Further, all three bridges on the route cannot accommodate a 12.0 m (40 feet) wide roadway. These key deficiencies are related to the design of the roadway and can be corrected only through reconstruction activities.

Traffic has steadily increased on U.S. Highways 12 and 287 in recent decades and traffic volumes are expected to continue to grow at nearly 5 percent annually over the foreseeable future. These conditions indicate the need for operational improvements like increasing passing opportunities and providing left turn lanes to separate slower-moving vehicles from the main stream of traffic within the corridor. Without improvements, this section of highway will operate below MDT's targeted Level of Service (LOS B) within the next twenty years.

As indicated earlier, the subgrade beneath the existing highway has high moisture levels. High moisture in the subgrade can reduce the strength and stiffness of the aggregate base materials beneath the road surface, contributing to pavement failures like rutting and potholes. Reconstruction of the roadway is needed to remedy the moisture problem in the subgrade.

Access management is lacking within the project corridor and there are unsafe and underused access points along the highway corridor. Access management will be provided to help MDT preserve the capacity of the roadway and enhance safety for road users over the foreseeable future. Similar reconstruction or facility improvements have already been implemented on this route between Townsend and Helena. These improvements have benefited traffic operations by increasing passing opportunities and separating turning traffic from through traffic at several locations.

PART 2.0 of the EA provides additional details about the purpose of this proposed project.

PREFERRED ALTERNATIVE

PART 3.0 of the EA describes the alternatives considered for the Townsend-South project including the improvements comprising MDT's Preferred Alternative. The Preferred Alternative would provide a paved road surface varying from 12.0 m (40 feet) wide in areas with an undivided two-lane cross-section to 22.8 m (76 feet) wide in passing segments with four through lanes and a median/left turn lane.

Travel lanes and passing lanes would typically be 3.6 m (12 feet) wide. Four-lane passing areas would be provided at three locations within the project corridor. Turning lanes would be 3.6 m (12 feet) or 4.2 m (14 feet) wide. Shoulder widths would typically be 1.2 or 2.4 m (4 or 8 feet) wide. The Preferred Alternative would also:

- flatten roadside slopes;
- upgrade signing, striping and guardrails;
- replace existing bridges with new structures and/or pipes and improve drainage elsewhere in the corridor;

-
- relocate conflicting utilities; and
 - acquire additional right-of-way over the length of the project.

Due to the nearby location of the Montana Rail Link railroad line, road widening must generally occur to the east of the existing highway. At the north end of the project, the centerline of the new road would closely follow that of the existing highway. However, south of RP 78.7, the centerline would be shifted about 10 m (33 feet) to the east and would parallel the existing road to about RP 83.5. South of RP 83.5, the new road's centerline would be shifted slightly westward to parallel the east shoulder of the existing road. The new road would follow this alignment to RP 86.1 before transitioning back to the centerline of the existing road at RP 86.3.

OTHER ALTERNATIVES CONSIDERED

Other locations for the road (including moving the highway west of the Missouri River or considerably east of its present alignment) were considered. Additionally, several other designs (lane configurations) were evaluated for this proposed project. These alternatives and the reasons why these other potential actions were rejected are discussed in PART 3.0. The reasons for eliminating other alternatives are also disclosed in PART 3.0.

In general, other alternatives were dismissed because they require the community of Townsend to be bypassed, require MDT to construct and maintain substantially more road than the Preferred Alternative, or have the potential to create environmental impacts similar to or greater than those associated with the Preferred Alternative. The alternative of taking no action was also considered and analyzed in detail. The No Action Alternative does not meet the purpose and need for the project because it fails to remedy identified geometric deficiencies and would not improve the operation or safety of the existing highway.

ENVIRONMENTAL EFFECTS AND MITIGATING MEASURES

This EA evaluates in detail the potential social, economic and environmental impacts of the No Build Alternative and of the Preferred Alternative in PART 4.0. The most apparent environmental effects associated with the Preferred Alternative and the No Action Alternative are summarized in **TABLE S-1**.

TABLE S-2 presents mitigating measures for impacts resulting from the implementation of the Preferred Alternative.

Table S-1: Summary of Impacts for Alternatives Evaluated in Detail

RESOURCE OR IMPACT CATEGORY	NO ACTION	PREFERRED ALTERNATIVE
LANDFORMS AND SOILS	No impacts.	The proposed road improvements would require cutting and filling adjacent terrain to widen the highway, modify horizontal curves and road grades, and develop portions of road on new areas adjacent to the present highway.
IMPORTANT FARMLAND	No impacts.	The construction of the proposed project would directly convert about 22 ha (54.6 acres) of soils meeting the designation of Important Farmland. There would be no indirect conversion of Important Farmland.
WATER QUALITY	Minor amounts of sediments and other pollutants associated with sanding and deicing would continue to be introduced to surface waters in the project area by snow plowing and runoff from snow melting.	<p>Road widening would increase the impervious surface area of the highway and increase runoff to adjoining lands. Pollutants from the highway would be transported into roadside wetlands and surface waters.</p> <p>Vegetation clearing and grading for the proposed highway construction would increase the potential for soil erosion and sediment transport.</p> <p>Work within stream channels would be required for new structure or culverts at Deep Creek, the Deep Creek Overflow, Greyson Creek, and Dry Creek. The proposed project would affect irrigation features and require work within jurisdictional irrigation ditches crossed by the highway.</p>
FLOODPLAINS	No impacts.	This proposed project would result in transverse encroachments on delineated floodplains at Deep Creek and Greyson Creek and a longitudinal encroachment on the delineated floodplain of the Missouri River between RP 83 and RP 84.
AIR QUALITY	Minimal long-term effects due to vehicle emissions associated with increased traffic on the route.	<p>Minimal long-term effects due to vehicle emissions associated with increased traffic on the route.</p> <p>The Preferred Action would result in short-term air quality impacts during construction of the proposed project due to the disturbance of relatively large areas and operation of heavy equipment in work zones.</p>
VEGETATION	No further effects to vegetation resources within the corridor.	The proposed highway improvements would result in the permanent loss of vegetation where roadway alignment revisions and widening occur. Temporary disturbances would occur where vegetation is cleared from the right-of-way, at staging areas for construction equipment and at any necessary borrow sites.

Table S-1: Summary of Impacts (Cont.)

RESOURCE OR IMPACT CATEGORY	NO ACTION	PREFERRED ALTERNATIVE
VEGETATION		<p>Impacts to known occurrences of sensitive plants have been avoided.</p> <p>Construction would disturb existing noxious weed communities. Opportunities for new noxious weed establishment would occur in disturbed areas.</p>
WETLANDS	No new effects to wetlands in the project area.	The proposed project would result in direct impacts to 22 of the 26 delineated wetland sites in the corridor and the loss of about 5.6 ha (13.9 acres) of wetland.
THREATENED OR ENDANGERED SPECIES	No impacts.	<p>A determination of May Affect, Not Likely to Adversely Affect was made for project-related effects to bald eagles.</p> <p>A determination of May Affect, Likely to Adversely Affect was made with respect to project effect to Ute ladies' tresses.</p>
WILDLIFE RESOURCES	<p>No new impacts to wildlife resources or habitat.</p> <p>Animal-vehicle collisions (most often involving deer) are common in the corridor, particularly between RP 80 and RP 83.</p> <p>Traffic growth on the route could result in more wildlife mortalities.</p>	<p>The impacts on wildlife associated with the reconstruction of U.S. Highway 287 would include: the temporary loss of and avoidance of habitats adjacent to the construction area; direct mortality from vehicles and construction equipment; and permanent habitat degradation and/or displacement.</p> <p>The proposed road widening would further contribute to habitat fragmentation already occurring in the area.</p> <p>Higher travel speeds, along with projected traffic increases, could increase wildlife mortalities in the corridor. Increased driver sight distance along with the planned road and shoulder widening, would help offset potential increases in wildlife mortalities to some extent by affording drivers better opportunities to identify and avoid wildlife on the highway.</p>
AQUATIC RESOURCES	<p>No new impacts to aquatic resources.</p> <p>Road maintenance activities would continue to occur in proximity to Deep, Greyson, and Dry Creeks and the Missouri River.</p>	<p>Surface waters crossed by the project would be affected by direct disturbances for bridge removal and replacement and new culvert installations.</p> <p>Project activities would temporarily increase the potential for erosion and increased turbidity in local surface waters.</p> <p>Fish passage at Deep, Greyson, and Dry Creeks and would be maintained.</p>

Table S-1: Summary of Impacts (Cont.)

RESOURCE OR IMPACT CATEGORY	NO ACTION	PREFERRED ALTERNATIVE
LAND USE	No change to adjacent land uses or accesses.	<p>Adjoining land would be converted to highway right-of-way. There would be no adverse effects to commercial or residential developments located along the roadway. Minor amounts of cropland and pasture would be converted to right-of-way.</p> <p>The project would not conflict with the <i>Broadwater County Growth Policy Plan & Comprehensive Economic Development Strategy</i>.</p> <p>Induced growth is not anticipated as a result of this project's capacity and safety improvements.</p>
RIGHT-OF-WAY	No impacts.	<p>Estimates based MDT's preliminary Right-of-Way Plans show that about 29.6 ha (73.0 acres) of new right-of-way would be required.</p> <p>At the request of the landowner, MDT has completed the advance acquisition of a residence and necessary right-of-way from property east of the existing highway at about RP 85.2. The Preferred Alternative would not require the relocation of any other residences or businesses to accommodate planned reconstruction of the highway.</p> <p>Conflicting utilities would be relocated.</p>
TRANSPORTATION AND CIRCULATION	There would be no change to current operational conditions on U.S. Highway 287. The anticipated traffic growth on the route would decrease the operational efficiency of the facility and could ultimately increase traffic conflicts between various highway users.	Rebuilding U.S. Highway 287 would enhance traffic operations and safety by: increasing the width of the roadway; adding new passing areas in both directions at three locations; providing left turn lanes at public roads; constructing safe roadside slopes; and providing access management within the project corridor. These measures would help to reduce the chances for and severity of accidents.
SOCIAL IMPACTS/ ENVIRONMENTAL JUSTICE	No safety or operational improvements would be provided for highway users.	<p>No notable effects on the location, distribution, density or growth rate of the population of Townsend or Broadwater County. No environmental justice impacts.</p> <p>This alternative would provide traffic safety benefits and more efficient facility for road users. Minor benefits to emergency service providers by improving response times.</p>

Table S-1: Summary of Impacts (Cont.)

RESOURCE OR IMPACT CATEGORY	NO ACTION	PREFERRED ALTERNATIVE
ECONOMIC	<p>MDT would still be obligated to budget funds to maintain the existing facility and perform spot improvements on U.S. Highway 287.</p> <p>Although not a certainty, the anticipated increases in traffic on this route could contribute to a higher incidence of traffic accidents (and associated economic losses) without safety and operational improvements.</p>	<p>The proposed highway project would not adversely affect or cause notable long-term changes to the economy of Broadwater County or Townsend.</p> <p>Right-of-way acquisition would permanently remove about 29.6 ha (73.0 acres) of private property (mostly agricultural land) from the tax rolls. Taxes paid on the land would be lost to Broadwater County.</p> <p>Some temporary beneficial economic impacts (jobs and increased demands for local goods and services) may occur during construction.</p>
NOISE	Noise levels would continue to increase on adjoining properties due to increased traffic. The noise study indicates the NAC for Category B is presently exceeded at one location and would be exceeded at an additional location by the Design Year.	The NAC for Category B activities (66 dBA) would be exceeded at two receptors in the Design Year. Predicted noise levels at one location would exceed the NAC by 7 dBA in the Design Year. The advance acquisition of a residential property has eliminated the potential noise impact at the other corridor location.
HAZARDOUS SUBSTANCES	No impacts.	The proposed project would not affect any hazardous waste sites or encounter any areas of known contamination.
CULTURAL RESOURCES	No impacts.	<p>No Effect to Feature 2 of the Kieckbush Farm (24BW816) or the Northern Pacific Railroad line (24BW0818).</p> <p>No Adverse Effect to the Wallace House (24BW812), the Montana Ditch (24BW0729), the overflow channel associated with the East Side Canal of the Broadwater-Missouri Diversion Project (24BW0837), or the Big Springs Ditch (24BW0836).</p> <p>The historic bridges over the Montana Ditch (24BW956) and the Deep Creek Overflow (24BW958) would be removed and replaced with new bridges, box culverts or pipes. The Deep Creek Bridge (24BW957) is not NRHP-eligible.</p>
SECTION 4(F)	No impacts.	<p>The Wallace House, two historic concrete highway bridges, and historic irrigation features are subject to <i>Section 4(f)</i>.</p> <p>Nationwide Programmatic <i>Section 4(f)</i> Evaluation forms were prepared for each of these resources to document project related impacts and measures to minimize harm.</p>

Table S-1: Summary of Impacts (Cont.)

RESOURCE OR IMPACT CATEGORY	NO ACTION	PREFERRED ALTERNATIVE
LAND & WATER CONSERVATION FUND/SECTION 6(F)	No impacts.	No direct impacts. The proposed project would reconstruct the approach to the York's Islands FAS.
PEDESTRIANS AND BICYCLISTS	Bicyclists and pedestrians must use the existing road's 0.9 m (3-foot) paved shoulder or roadside slopes for travel through the area.	The Preferred Action would provide 2.4 m (8 foot) wide shoulders for use by pedestrians and bicyclists. Safety would be improved for these facility users.
VISUAL	No impacts.	Minor visual changes would result due to the increased width of the new roadway, a slight easterly shift in the road's location, and revised roadside slopes. These changes would be most apparent to area residents or frequent highway users.
CONSTRUCTION	Minimal and localized impacts associated with typical highway maintenance activities would occur.	Road reconstruction activities would cause temporary inconveniences to the traveling public and to local residents. These inconveniences may include slightly longer travel times, minor detours around work zones, and the noise and dust generated by construction equipment.
PERMITS REQUIRED	None required for typical highway maintenance activities.	A variety of water quality related permits would be required from federal and state agencies. Broadwater County must grant a floodplain development permit. Open-cut mining and air quality permits may be required during construction.

Table S-2: Summary of Mitigating Measures for the Preferred Alternative

RESOURCE OR IMPACT CATEGORY	MITIGATING MEASURES FOR THE PREFERRED ALTERNATIVE
LANDFORMS AND SOILS	<ul style="list-style-type: none"> Clearing and grubbing operations will be restricted to the minimum area necessary to accommodate the planned highway reconstruction. A Storm Water Pollution Prevention Plan (SWPPP) employing Best Management Practices for controlling erosion and sediment transport will be implemented. Areas disturbed within the MDT Right-of-Way or construction easements will be reseeded as quickly as practicable after construction.
IMPORTANT FARMLAND	<ul style="list-style-type: none"> No mitigating measures are necessary or proposed.
WATER QUALITY	<ul style="list-style-type: none"> A SWPPP will be implemented in the project area. Work in streams, wetlands, or "Talent" waters will be subject to the conditions of water-related permits from the MDEQ, MDFWP, and the COE. Development of a revegetation plan, erosion control measures, and SWPPP will be coordinated with appropriate permitting and resources agencies.
FLOODPLAINS	<ul style="list-style-type: none"> MDT will obtain a Floodplain Development Permit from the Broadwater County Floodplain Administrator for construction activities within the delineated floodplains of the Missouri River or its tributaries.
AIR QUALITY	<ul style="list-style-type: none"> MDT's Standard Specifications for Road and Bridge Construction will be implemented for this project. This document includes guidelines for construction operations to help minimize adverse effects on air quality. Contractors will be required to obtain permits from the MDEQ Air Quality Bureau for activities like gravel crushing and the production of asphalt. MDT's contractor will incorporate all necessary dust control measures into the plans for the proposed project.
VEGETATION	<ul style="list-style-type: none"> Clearing and grubbing operations will be restricted to the minimum area necessary to accommodate the planned reconstruction activities. Areas disturbed within the MDT Right-of-Way or construction easements will be reseeded as quickly as practicable after construction. A revegetation plan will be developed for this project to be followed by the contractor. The plan will include specifications on seeding methods, seeding dates, types and amounts of mulch and fertilizer, and seed mix components. Broadwater County Weed Control District will be offered an opportunity to review the revegetation plan. The Contractor must also follow the requirements of the County Noxious Weed Management Act and all county and contract noxious weed control provisions. Construction equipment must be cleaned prior to entering the project area to avoid the unintentional introduction of noxious weed seed from other sites. Mulch used for revegetation will be certified as weed-free.

Table S-2: Summary of Mitigating Measures for the Preferred Alternative

RESOURCE OR IMPACT CATEGORY	MITIGATING MEASURES FOR THE PREFERRED ALTERNATIVE
WETLANDS	<ul style="list-style-type: none"> ▪ Impacts were avoided and minimized to the extent practicable by keeping the proposed alignment adjacent to the existing alignment and slightly shifting the alignment of the roadway in critical wetland areas. To the extent possible, the three passing lane sections have been placed to limit wetland impacts. ▪ Compensatory mitigation for the projected wetland loss is being pursued under the 1996 MDT Interagency Wetland Group operating procedures. MDT is currently considering other opportunities in the watershed including a stream restoration project on Woodson Creek near Ringling in Meagher County and a potential wetland mitigation site on the Hahn Ranch south of Townsend. ▪ All Clean Water Act Section 404 permit conditions, as well as Section 401 water quality certification and Montana Stream Protection Act (124) conditions, and any additional state or federal water quality requirements/conditions will be complied with. ▪ Removed culverts, guardrail, and other items will not be stockpiled in or adjacent to wetland or stream areas. ▪ Where practicable, construction in wetlands will be timed in order for these sites to be as "dry" as possible during construction to minimize sedimentation as well as construction difficulties. ▪ Construction equipment operating in wetlands will be limited to that which is needed to perform the necessary work. ▪ Disturbed wetland and streamside areas will be revegetated with salvaged wetlands material and soils obtained from impacted areas, where practicable. Additionally, appropriate measures will be taken to prevent the introduction/spread of noxious weeds into wetland areas. ▪ Wide-track or balloon-tire construction equipment will be considered for use in saturated/inundated areas. Timber pads, prefabricated equipment pads, or geotextile fabric overlain with gravel fill will be considered if typical construction equipment is used in such areas. All pads and temporary fill will be removed following construction. ▪ Straw wattles or other accepted erosion and sedimentation control devices will be installed at the edges of wetlands and other waters of the U.S. prior to construction. All exposed soils will be permanently stabilized at the earliest practicable date. ▪ Hazardous materials, including fuels and lubricating oils, will not be stored within 30 m (100 feet) of wetlands or streams. Additionally, construction equipment will not be refueled within 30 m (100 feet) of such areas.

Table S-2: Summary of Mitigating Measures for the Preferred Alternative

RESOURCE OR IMPACT CATEGORY	MITIGATING MEASURES FOR THE PREFERRED ALTERNATIVE
THREATENED OR ENDANGERED SPECIES	<p><u>CONSERVATION MEASURES FOR BALD EAGLES</u></p> <ul style="list-style-type: none"> ▪ Prior to the start of construction, an MDT biologist will confirm the nesting status of bald eagles in the project area. At a minimum, coordination with local resource agency biologists and a MNHP records check will occur. ▪ If MDT becomes aware of any threatened, endangered, proposed or candidate species located in the vicinity of potential staging and borrow/gravel source areas, MDT will inform the contractor of those locations and of potential restrictions that may be required to avoid impacts to those species. ▪ Areas disturbed within the MDT Right-of-Way or construction easements will be reseeded as quickly as practicable after construction. ▪ Best Management Practices (BMPs) will be followed to minimize the potential for increasing sediment loads in any of the project area waterways. <p><u>CONSERVATION MEASURES FOR UTE LADIES' TRESSSES</u></p> <ul style="list-style-type: none"> ▪ The project corridor will be surveyed again for Ute ladies' tresses prior to construction. ▪ The roadway alignment will be designed to minimize impacts to known populations of Ute ladies' tresses. ▪ Areas with known populations of Ute ladies' tresses and other sensitive plants will be shown on MDT's design plans. ▪ MDT's biologist will also "flag" the known locations of Ute ladies' tresses prior to the start of construction to help contractors avoid these sensitive areas. The contractor will also be required to place temporary fencing around the flagged locations to help ensure that construction activities do not impact these areas. ▪ Clearing and grubbing operations will be restricted to the minimum area necessary to accommodate the planned reconstruction activities. ▪ To minimize potential indirect affects of the proposed project on known Ute ladies' tresses locations, current hydrologic conditions within the roadside ditches will be maintained to the extent practicable to prevent wetland habitat from drying out or becoming too wet to support this species.
WILDLIFE RESOURCES	<ul style="list-style-type: none"> ▪ Clearing and grubbing operations will be restricted to the minimum area necessary to accommodate the planned reconstruction activities. ▪ Best Management Practices (BMPs) will be followed to minimize the potential for increasing sediment loads in any of the project area waterways. ▪ Areas disturbed within the MDT Right-of-Way or construction easements will be reseeded as quickly as practicable after construction.

Table S-2: Summary of Mitigating Measures for the Preferred Alternative

RESOURCE OR IMPACT CATEGORY	MITIGATING MEASURES FOR THE PREFERRED ALTERNATIVE
WILDLIFE RESOURCES	<ul style="list-style-type: none"> MDT will include 0.5 m (1.6-foot) wide benches underneath the ends of the new bridge at Deep Creek to facilitate terrestrial wildlife passage. To enhance small mammal crossings of the highway, culvert installations will be perpetuated at RP 79.0 and RP 81.1 and 600 mm (24-inch) diameter pipes will be installed in the upper half of the roadway prism in the vicinity of RP 79.3, RP 81.3, RP 81.6, RP 82.3, RP 82.6, and RP 83.4. To enhance crossings of the highway for larger mammals, a new 2100 mm (82-inch) diameter culvert will be installed at RP 81.3. Prior to the nesting season (typically mid-May through mid-July), MDT will require the Contractor to remove old nest material from inside or underneath structures where swallow nesting is known or suspected and install physical measures (such as plastic netting or wire) to exclude cliff swallows from establishing new nests or reoccupying old nests. MDT will also require that the demolition of bridges or culverts where swallow nesting is known or suspected occurs outside the nesting season. Prior to construction, an MNHP records check for new sensitive species occurrences will be performed in the project area.
AQUATIC RESOURCES	<ul style="list-style-type: none"> Construction equipment will not be permitted within the active channel of Deep, Greyson, and Dry Creeks (unless otherwise permitted by the regulatory agencies). The Contractor will be required to comply with the conditions attached to permits for the project including any measures deemed necessary to prevent the spread of whirling disease to other waters. Clearing and grubbing operations will be restricted to the minimum area necessary to accommodate the planned reconstruction activities. A Stormwater Pollution Prevention Plan (SWPPP) employing Best Management Practices for controlling erosion and sediment will be designed by MDT and approved by the MDEQ prior to construction. Any restrictions on work near streams or in wetlands will be specified as terms of water related permits obtained from MDEQ, MDFWP, and the COE. Removed culverts, guardrail, and other items will not be stockpiled in or adjacent to wetland or stream areas. Construction equipment operating in wetlands will be limited to that which is needed to perform the necessary work. The width of the construction zone will be minimized to the extent practicable in wetland and stream areas.

Table S-2: Summary of Mitigating Measures for the Preferred Alternative

RESOURCE OR IMPACT CATEGORY	MITIGATING MEASURES FOR THE PREFERRED ALTERNATIVE
LAND USE	<ul style="list-style-type: none"> No mitigating measures are proposed for land use impacts associated with this proposed project.
RIGHT-OF-WAY	<ul style="list-style-type: none"> The acquisition of land or improvements for highway construction will be in accordance with the <i>UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACT</i> of 1970 and the <i>UNIFORM RELOCATION ACT AMENDMENTS</i> of 1987. MDT will prepare an Access Management Plan and implement access control in the project corridor to enhance traffic operations and safety. MDT's Right-of-Way design for this project will attempt to minimize the area required for the new highway and adverse effects on adjoining landowners. Temporary construction permits will be used when possible to minimize the need for new right-of-way. MDT will coordinate with the appropriate utility companies to determine the timing and details of relocating conflicting utilities.
TRANSPORTATION AND CIRCULATION	<ul style="list-style-type: none"> MDT will maintain traffic through the project area during construction by allowing continued use of the existing road and will attempt to minimize delays. MDT will ensure that access to properties adjacent to the highway is maintained throughout the construction period.
SOCIAL IMPACTS/ ENVIRONMENTAL JUSTICE	<ul style="list-style-type: none"> No mitigating measures are required or proposed.
ECONOMIC	<ul style="list-style-type: none"> MDT will maintain traffic through the project area during construction. Access to residences, businesses, and agricultural lands adjacent to the project will be perpetuated during the reconstruction of the highway.
NOISE	<ul style="list-style-type: none"> Noise abatement measures are not considered to be reasonable or feasible actions to implement with the proposed project.
HAZARDOUS SUBSTANCES	<ul style="list-style-type: none"> In accordance with MDT's Standard Specifications, the contractor for the project will be required to store fuel and other hazardous materials away from surface waters and wetlands to reduce the potential adverse effects of an accidental spill. The contractor for the project will be required to plan for and implement containment procedures in response to any accidental spills of fuel or other hazardous materials.
CULTURAL RESOURCES	<ul style="list-style-type: none"> If significant unanticipated cultural materials are encountered during construction, MDT will require the contractor(s) to temporarily suspend work in the immediate vicinity of the find until the cultural materials can be assessed. MDT and FHWA have complied with <i>Section 106</i> of the <i>NATIONAL HISTORIC PRESERVATION ACT</i> for historic bridges by following the procedures required by the 1997 Programmatic Agreement regarding historic roads and bridges in Montana.

Table S-2: Summary of Mitigating Measures for the Preferred Alternative

RESOURCE OR IMPACT CATEGORY	MITIGATING MEASURES FOR THE PREFERRED ALTERNATIVE
SECTION 4(F)	<ul style="list-style-type: none"> ▪ The project will be accomplished in a manner that does not substantially alter the setting of the Wallace House or historic irrigation ditches within the project area. ▪ Mitigation for effects to historic irrigation ditches and historic bridges has been accomplished as required under the provisions of the 1997 Programmatic Agreement between MDT, FHWA, the Montana SHPO and the ACHP.
LAND & WATER CONSERVATION FUND/SECTION 6(F)	<p>The proposed project would reconstruct the approach to the York's Islands FAS. MDT will implement the following measures to mitigate temporary, construction-related impacts to facilities and use of the FAS:</p> <ul style="list-style-type: none"> ▪ Public access to the FAS from U.S. Highway 287 will be perpetuated throughout the construction period. ▪ MDT will reset existing signs for the FAS located adjacent to the highway if affected by the proposed reconstruction project.
PEDESTRIANS AND BICYCLISTS	<ul style="list-style-type: none"> ▪ No mitigating measures are required or proposed.
VISUAL	<ul style="list-style-type: none"> ▪ Areas disturbed within the MDT Right-of-Way or construction easements will be reseeded as quickly as practicable after construction.
CONSTRUCTION	<ul style="list-style-type: none"> ▪ Traffic control will be accomplished in accordance with MDT's standard practices and the Manual on Uniform Traffic Control Devices (MUTCD). ▪ If dust generated by construction activities becomes a concern, it will be controlled by the required use of either water or another approved dust suppressant. ▪ Temporary and permanent Best Management Practices (BMPs) for erosion control will be employed to prevent sediments from reaching the area surface waters or wetlands. A SWPPP employing BMPs will be implemented throughout the project corridor. ▪ All work related to the proposed Townsend-South project will be subject to the provisions included in the current edition of Standard Specifications for Road and Bridge Construction as adopted by MDT and the Montana Transportation Commission. ▪ Reasonable access to adjacent businesses and residences will be maintained during construction. ▪ Disposal of project waste materials will be accomplished with applicable laws, rules and regulations.

PART 1.0: Description of the Proposed Action

PART 1.0: Description of the Proposed Action

1.1 INTRODUCTION

The Montana Department of Transportation (MDT) plans to improve transportation in Broadwater County by reconstructing 13.2 km (8.2 miles) of U.S. Highway 287. This proposed project begins at the south city limits of Townsend near reference point (RP) 78.1 and ends near the grain terminal facility north of Toston at RP 86.3.

The proposed road project would reconstruct the existing roadway and make changes to its alignment to provide an improved driving surface and safer road for highway users. The proposed work would be completed under the project designated by MDT as "**Townsend-South**" [Project Number NH-F 8-4(16) 78; CN 1420].

U.S. Highway 287 (FAP 8) is classified as a Rural Principal Arterial. This section of highway is part of the Non-Interstate National Highway System (NHS) in Montana, providing an important link between Interstate 15 at Helena to Interstate 90 near Three Forks. The NHS consists of over 6,196 km (3,850 miles) of the state's most important transportation routes including the Interstate highway system, other principal arterials, and other highways that are essential to the nation's strategic defense policy or that link military installations. The project begins just south of the junction of U.S. Highways 12 and 287 in Townsend.

1.2 PROJECT LOCATION, LENGTH AND TERMINI

1.2.1 PROJECT LOCATION

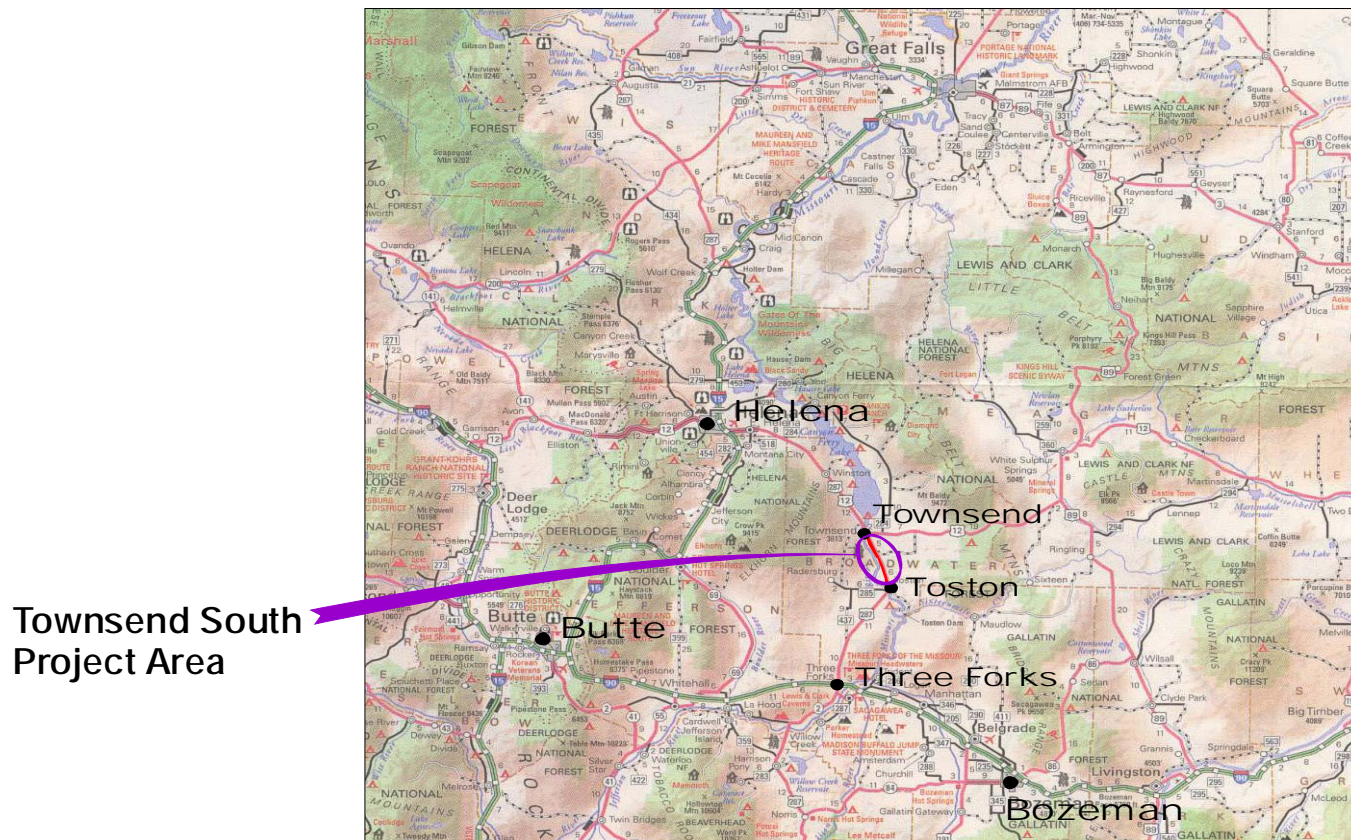
The project area is located in west-central Montana near the center of Broadwater County. The City of Townsend, the County Seat of Broadwater County, is located at the northern edge of the project area. Townsend is located about 60 km (37 miles) southeast of Helena in neighboring Lewis and Clark County, and about 55 km (34 miles) north of Three Forks in Gallatin County. The community of Toston is located just south of the project area on U.S. Highway 287.

The Townsend-South project is located within the following Townships, Ranges, and Sections, M.P.M.:

Township-5-North, Range-2-East, Sections 3, 10, 11 and 14
Township-6-North, Range-2-East, Sections 5, 6, 8, 16, 17, 21,
27, 28, and 34

The general location of the project area in Montana and in Broadwater County is shown in **FIGURE 1**.

FIGURE 1
PROJECT LOCATION
MAP



1.2.2 PROJECT TERMINI

This proposed project begins at the south city limits of Townsend near reference point (RP) 78.1 and ends north of Toston at RP 86.3. These beginning and end points for the project are logical based on a consideration of the three factors listed in 23 CFR 771.111(f). This statute requires that the limits of transportation projects be established so that the proposed action:

- Connects logical termini and is of sufficient length to address environmental matters on a broad scope;
- Has independent utility or independent significance (i.e., is usable and is a reasonable expenditure even if no additional transportation improvements in the area are made); and
- Does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements in the area.

RP 78.1 is the logical beginning terminus for the proposed project because it is the ending point for the recently completed Townsend-Urban reconstruction project.

RP 86.3 was chosen as the southern terminus for the Townsend-South project based on the need to select an ending point that does not limit the consideration of any alignment alternatives for the future reconstruction of U.S. Highway 287 in the Toston area. The replacement of the highway bridges over the Missouri River and Montana Rail Link at Toston and the reconstruction of the route further to the south are reasonably foreseeable transportation improvements.

A project to add passing lanes south of Toston was let to contract in April 2005 and a similar project north of I-90 at Three Forks should be built within the next two years. However, the funding for and timing of a bridge replacement project at Toston is uncertain and such a project may not occur within the next ten years. Various alignment options for the new bridges and their approaches must first be identified and evaluated. Therefore, the exact location where the bridge replacement project would tie into the existing road is unknown at this time. Setting the southern terminus of the Townsend-South project at RP 86.3 (a location north of the bridges) does not preclude any alignment possibilities for a future project to replace the highway bridges at Toston.

The Townsend-South project has independent utility because the proposed highway reconstruction activities are stand-alone actions that do not require transportation improvements be made elsewhere on the route. The project is also a reasonable expenditure of public funds even if no additional transportation improvements were made in the area.

The resulting project corridor is of sufficient length to allow for a comprehensive review of the environmental effects associated with the proposed highway reconstruction.

FIGURE 2 shows the section of U.S. Highway 287 proposed for reconstruction under the Townsend-South project.

1.2.3 PROJECT AREA PHOTOGRAPHS

Typical landscapes within the Townsend-South project area are shown in **PHOTO PLATES 1** and **2**.

1.3 SCOPE OF THE PROPOSED PROJECT

The proposed project involves reconstructing and widening the existing 9.1 m (30 foot) wide roadway to enhance the operation and safety of the facility. At a minimum, the new roadway would have a 12.0 m (40 feet) finished top width and provide two 3.6 m (12 foot) driving lanes and two 2.4 m (8 foot) shoulders. However, additional turning lanes would be provided at other locations within the Townsend-South corridor. A two-lane road with center median/turning lane (similar to the existing road within the community) would be provided to serve the commercial developments at the south edge of Townsend. A left turn lane for southbound vehicles would be provided at Lower Deep Creek Road (RP 79.5).

Three four-lane passing areas would be provided within the project corridor. The passing areas would include four 3.6 m (12 foot) driving lanes and two 2.4 m (8 foot) shoulders. Designated left turning lanes for southbound motorists would be provided at Shelley Road (RP 80.9) and at the Litening Barn/Dry Creek Road intersection (RP 83.1). Because these left turn lanes fall within the four-lane passing areas, the proposed road would be five-lanes wide in the vicinity of these major county road intersections.

The proposed horizontal and vertical alignments would both closely follow that of the existing roadway. Initially, the centerline of the new road would closely follow that of the existing highway. However, south of RP 78.7, the centerline would be shifted about 10 m (33 feet) to the east and would parallel the existing road to about RP 83.5. South of RP 83.5, the new road's centerline would be shifted to the west and parallel the east shoulder of the existing road and connect to the existing road at RP 86.3. The vertical alignment may be raised slightly to improve sight distance at a vertical curve near RP 83.4 and at drainage crossing locations to provide adequate cover for pipe and structure installations.

The project would flatten roadside slopes; upgrade signing, striping and guardrail; provide drainage improvements; and relocate conflicting utilities. Additional right-of-way would need to be purchased, and permits would be required for ditch work during construction. The project would result in an improved driving surface and a safer roadway for the traveling public.

The existing highway is paralleled by tracks belonging to the Montana Rail Link Railroad, which is in turn paralleled by the Missouri River to the west. The proposed project is considered to be in flat terrain. Horizontal and vertical alignments would be designed to meet the requirements for a design speed of 110 kilometers per hour (km/h) (70 mph). This design speed is consistent with standards for Rural Principal Arterials in level terrain as outlined in MDT's "Road Design Manual." The posted speed limits would be unchanged with this project.

All existing irrigation siphons, culverts and bridges in the project area would be evaluated and replaced where needed.



Townsend - South Figure 2 Project Area

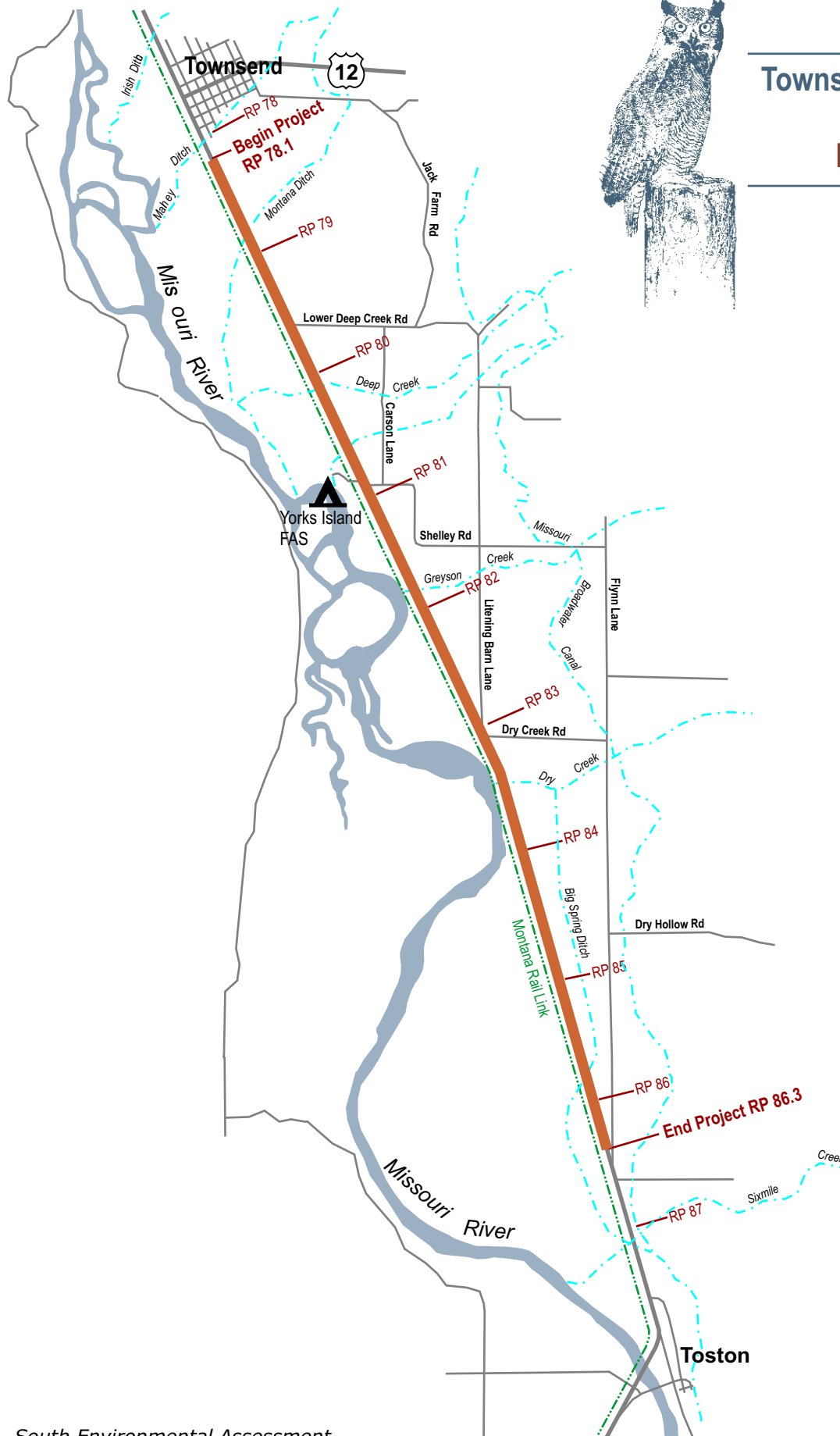


Photo Plate 1: Typical Landscapes Townsend-South Project Corridor

Photograph 1:
Typical roadside
development at the
southern edge of Townsend
near the beginning of the
proposed project.



Photograph 2:
U.S. Highway 287 south of
Townsend follows a tangent
alignment through
agricultural lands.



Photo Plate 2: Typical Landscapes Townsend-South Project Corridor

Photograph 1:

Many high quality wetlands exist along U.S. Highway 287 between RP 79 and RP 83. This open water wetland area is located north of the Litening Barn/Dry Creek Road intersection.



Photograph 2:

This photograph shows U.S. Highway 287 near the southern terminus of the Townsend-South project. The community of Toston is in the distance.



Safety enhancements proposed with the project include the installation of rumble strips and the realignment of the county road intersection at RP 83.1 to provide one access point with a 90-degree approach to the highway, including a left-turn bay.

Additional detail about the proposed improvements and alternatives considered is included in PART 3.0.

1.4 JURISDICTION

U.S. Highway 287 is under the jurisdiction of MDT, which has full maintenance responsibilities for the route in the project area. Major roads intersecting the project corridor are under the jurisdiction of and maintained by Broadwater County.

There are no federal or state lands adjacent to the highway in project area. However, a state-owned public recreation site adjacent to the Missouri River exists west of the highway within the project corridor. York's Islands Fishing Access Site, operated and maintained by the MONTANA FISH, WILDLIFE AND PARKS (MDFWP), is accessible from an approach on the west side of the highway at RP 81.5.

Montana Rail Link is indirectly involved in the project. The railroad's mainline track and associated right-of-way is west of and parallel to U.S. Highway 287 through the entire project corridor.

The current daytime speed limit on rural sections of U.S. Highway 287 is 110 km/h (70 mph) for cars and light trucks and 100 km/h (60 mph) for heavy trucks. Nighttime speed limits on this route are 8 km/h (5 mph) less for all vehicles. The Montana Highway Patrol has primary law enforcement jurisdiction on U.S. Highway 287.

PART 2.0: Purpose of and Need for Action

PART 2.0: Purpose of and Need for Action

This section of the EA discusses the purpose of the proposed highway improvement project and describes the transportation and other needs to be addressed by the Townsend-South project. These "needs" primarily relate to substandard conditions associated with the roadway and its features and the need to improve traffic operations and safety within the project corridor. The various alternatives presented in PART 3.0 were developed in response to the needs described on the following pages.

2.1 PURPOSE AND NEED STATEMENT

MDT has determined that a portion of U.S. Highway 287 between Townsend and Toston in Broadwater County is inadequate for future traffic volumes and operating characteristics. The existing roadway is also 65 years old and does not meet current geometric design standards outlined in MDT's *Road Design Manual*.

The purpose of the proposed Townsend-South project [NH-F 8-4(16) 78; Control No. 1420] is to enhance the operational characteristics, safety and physical conditions of the existing facility through the consideration of contemporary design practices. Reconstructing the existing two-lane highway is needed to ensure the facility meets applicable MDT geometric design standards and provides the desired improvements in safety and highway operations for the traveling public.

To accomplish this purpose, the proposed action must:

- incorporate physical changes to the roadway and its adjoining environment so the road's design complies with MDT's geometric design standards for Rural Principal Arterials and with MDT's Route Segment Plan;
- provide a transportation facility that meets current and future demands through the replacement of substandard highway infrastructure including the road's pavement and associated bridges, culverts and pipes;
- improve the operation and efficiency of the facility for the traveling public by incorporating measures to increase passing opportunities in the corridor; and
- reduce opportunities for traffic conflicts and accidents associated with turning movements at major intersections.

2.2 TRANSPORTATION AND OTHER NEEDS

The following sections identify the problems or concerns that already exist with the current transportation facility or that will exist if the proposed improvements are not implemented. The section begins with a brief history of the development of the Townsend-South project and a discussion of the roadway's use.

2.2.1 PROJECT HISTORY AND STATUS

U.S. Highway 287 in the Townsend-South project corridor was constructed in 1939 under as-built project FAP 204-C (2). The original project extended from approximately RP 78.1 to RP 87.7 on the route. The roadway received an overlay with seal and cover in 1979 under project F 8-4(1) 77 U-1. Routine maintenance actions have also been completed over the years on this route.

MDT's efforts to reconstruct U.S. Highway 287 south of Townsend began in the early 1990s with the nomination of the "Townsend-Toston" project. The proposed project began at the south city limits of Townsend and ended at the junction of Secondary Highway 285 south of Toston. MDT initially planned a widening, mill, fill, and overlay project but in 1992 changed the scope to a reconstruction project. The principal reason for the change in the scope was the discovery of high moisture levels in the subgrade soil beneath the highway. MDT concluded that the subgrade moisture problem could not be properly addressed without reconstructing the highway.

Work began on an EA for the Townsend-Toston project in 1995. However, the project was put on hold near the end of 1996 due to funding reasons and potential right-of-way issues associated with providing new bridges across the Missouri River and Montana Rail Link Railroad near Toston.

Late in 1998, MDT proposed a new reconstruction project known as "Townsend-South" that included all but the last 3.7 km (2.3 miles) of the original Townsend-Toston project. The project no longer included the construction of a new Missouri River bridge at Toston. The southern terminus was selected to ensure to not preclude any future options for replacing the highway bridge at Toston.

Work on an EA for the Townsend-South project was reinitiated in 2000 but again put on hold during 2001 as issues relating to the appropriate level of environmental documentation (a project-specific EA versus an Environmental Impact Statement for the U.S. Highway 12/287 corridor between East Helena and I-90 at Three Forks), the establishment of logical termini, and MDT's plans to initially acquire a right-of-way sufficient for a future four-lane through the corridor.

Efforts to advance the Townsend-South reconstruction project were resumed in early 2003. At this time, construction of the Townsend-South project is anticipated to begin in 2009.

2.2.2 FUNCTIONAL CLASSIFICATION

The roadways comprising Montana's highway system are functionally classified by the characteristics of service (function) provided by each facility. The functional classification system recognizes that each highway (or streets in urban areas) provides varying levels of access to property and travel mobility.

Functional classification also provides the framework for determining the geometric design of individual highways. Once the function of the highway is defined, the appropriate design controls, roadside safety elements, amenities, and other design values can be determined.

According to the NHS Route Segment Plan Map in MDT's *Road Design Manual*, U.S. Highway 287 is classified as a **Rural Principal Arterial**. Principal arterial highways are characterized by their capacity to quickly move relatively large volumes of traffic. The arterial system provides for high travel speeds and for the longest trip movements. Rural principal arterials are highways that provide access between an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility. As indicated previously, U.S. Highway 287 is on the NHS system.

2.2.3 CURRENT AND FUTURE ROAD USE

U.S. Highway 287 is an important transportation facility because it links interstate and regional population and commerce centers. U.S. Highway 287 provides a north-south connection between Interstate 15 at Helena and Interstate 90 near Three Forks. This highway also provides a convenient north-south connection between U.S. Highway 12 at Townsend and Interstate 90 near Three Forks. For this reason, commercial transporters often prefer U.S. Highway 287 to the use of Interstate 15. Residents of Townsend and northern Broadwater County also commonly travel U.S. Highway 12/287 while commuting to and from work, shopping, or leisure activities in Helena.

Due to the important transportation linkages provided by this route, improving U.S. Highway 287 through the Townsend-South corridor is essential to meeting the demands of commercial traffic passing through the area.

U.S. Highway 287 also provides access to recreational sites and public lands in the region. The highway generally parallels Canyon Ferry Reservoir and the Missouri River, providing access to a variety of outdoor recreation sites and opportunities related to these water bodies, particularly between Winston and Toston (campgrounds, fishing and boating access, etc.). The highway can also be used to access Helena National Forest lands on the east side of the Elkhorn Mountains north of Townsend. The route is also a designated portion of the historic Lewis and Clark Trail as it passes through Montana. U.S. Highway 287 provides access to public lands in the area managed by the BUREAU OF

BUREAU OF RECLAMATION (BOR) and the State of Montana. MTFWP's York's Islands Fishing Access Site is accessed from U.S. Highway 287 in the project area.

U.S. Highway 287 serves local traffic generated by area residents traveling to and from Townsend, the neighboring communities of Toston and Winston, and farms and ranches in the surrounding area. The highway also serves as one of the "main streets" for local commerce in Townsend.

Current and Future Traffic Volumes

Current and Future Traffic Volumes. There are no permanent traffic counters located on U.S. Highway 287 within the Townsend-South project area. However, two automatic traffic recorders are located north of the route's intersection with U.S. Highway 12. MDT maintains automatic traffic recorders (ATR Station A-2) on U.S. Highway 12/287 about 14.5 km (9 miles) east of Helena and at RP 72.4 (about 9 km or 5.7 miles north of the project area). Data for the Station A-2, shows that the average daily traffic (ADT) at was 5,730 vehicles per day in 2004, an increase of about 5.2 percent over the ADT for 2003.

ATR Station north of Townsend (Station A-101) has been recording traffic on the route only since 2000. The ADT for Station A-101 was 4,804 vehicles per day in 2004, an increase of about 4.8 percent over 2002 volumes. An ADT volume for Station A-101 is not available for 2003 due to road construction in the vicinity of the counter.

MDT's design traffic data for U.S. Highway 287 in the Townsend-South project area is summarized in **TABLE 2-1**.

Table 2-1: Current and Future Traffic in the Townsend-South Corridor

2002 Average Daily Traffic (ADT)	3,190
(Vehicles per day)	
2006 ADT	3,660
(Vehicles per day)	
2026 ADT	7,280
(Vehicles per day)	
Design Hourly Volume (DHV)	950
(Vehicles per hour)	
Percent Trucks (T)	10.2%
8,165 kg Equivalent Single Axle Loads (EASLs) (Daily)	338.17

MDT's traffic data indicate that traffic volumes within the Townsend-South corridor are anticipated to grow by about 4.9 percent annually over the 20-year period from 2006 to 2026.

The design hourly volume (DHV) represents the one-hour two-way traffic volume in the selected design year for the project (2026 in this case). The 30th highest hourly volume during the

**Variations in Traffic
On U.S. Highway
12/287**

design year is typically chosen as the DHV. The DHV typically represents about 15 percent of the ADT on rural arterial roads.

TABLE 2-1 shows that trucks comprise about 10 percent of all traffic on U.S. Highway 287 in the project area.

Detailed data from ATR Station A-2 for 2004 is shown in **TABLES 2-2** and **2-3** to illustrate typical daily and monthly variations in traffic occurring on this route.

Table 2-2: 2004 Daily Variation in Traffic on U.S. Highway 12/287 *

Day of the Week	% the Daily Average is of the ADT for Year*
Sunday	90.8%
Monday	97.2%
Tuesday	96.1%
Wednesday	98.6%
Thursday	102.0%
Friday	117.7%
Saturday	97.7%

* at ATR Station A-2 at RP 72.4

TABLE 2-2 shows that the most travel on the route occurs on Friday and the least travel occurs on Sunday.

TABLE 2-3 shows the busiest months for traffic on the route is typically the May through September period. In 2004, ADT volumes during this period ranged from about 4 to 21 percent higher than the ADT volumes at the counter location. The least traveled months during 2004 were December, January, February and March. ADT volumes during these months were typically 14 percent or more below the ADT at the counter location in 2004.

Table 2-3: 2004 Monthly Variation in Traffic on U.S. Highway 12/287 *

Month	% the Monthly Daily Average is of the ADT for Year
January	76.4%
February	86.2%
March	91.0%
April	97.6%
May	103.9%
June	114.8%
July	120.8%
August	116.4%
September	105.8%
October	103.6%
November	96.1%
December	87.2%

* at ATR Station A-2 at RP 72.4

2.2.4 LEVEL OF SERVICE (LOS)

One of the major reasons for undertaking the proposed improvements to U.S. Highway 287 is to provide for the safe and efficient movement of traffic. To accomplish this, the proposed action must provide highway facilities capable of handling the traffic likely to occur on the route over the foreseeable future.

The Transportation Research Board's *Highway Capacity Manual 2000 (HCM 2000)* provides procedures to estimate the traffic-carrying ability of highway facilities over a range of operating conditions. The principal objective of these procedures (known as capacity analysis) is to determine the number of vehicles that a facility can accommodate with reasonable safety during a specified time period. Capacity analysis also provides a way to estimate the maximum amount of traffic that a facility can accommodate while maintaining a prescribed level of operation. The *HCM 2000* defines levels of operation in terms of Level of Service (LOS). Capacity analysis typically examines both existing conditions and future (design year) traffic conditions.

The LOS is a quality of service measure that represents the operating conditions expected to occur on a highway segment of the highway when accommodating current or anticipated future traffic volumes. Factors affecting LOS include speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. The *HCM 2000* designates operating conditions using six levels of service, LOS A through LOS F. LOS A represents the best operating conditions (free-flowing traffic, highest travel speeds, and little or no interference between vehicles) and LOS F the worst operating conditions (congested conditions).

Levels of service for different types for highways facilities are based on several measures of performance. For two-lane highways, average travel speed and the percent time spent following are the primary measures of performance considered in the determination of LOS. The Average Travel Speed (ATS) is a measure of the efficiency of mobility within a two-lane highway section. The Percent Time Spent Following (PTSF) is a measure of the quality of service and represents the percent of time spent following another vehicle within a two-lane highway section. Density, expressed in passenger cars per mile per lane (pc/mi/ln), is the primary measure used to determine LOS on four-lane highways.

U.S. Highway 287 is considered to be a Class I highway according to the *HCM 2000*. Class I highways function as major intercity routes, primary arterials connecting major traffic generators, daily commuter routes, or as primary links in state and national highway networks. Motorists expect to travel at relatively high speeds on such routes. Descriptions of operating conditions and measures of performance for two lane highways in Class I under various LOS categories are provided in **TABLE 2-4**.

Service (LOS) Descriptions Two-Lane Highways*

LOS Category	Traffic Flow Conditions	Measures of Performance	
		Percent Time Spent Following (PTSF)	Average Travel Speed (ATS)
A	Unimpeded flow	Less than or equal to 35	Greater than 55
B	Reasonably free flow	Greater than 35-50	Greater than 50-55
C	Increase in formation of platoons (groups of vehicles traveling relatively close together)	Greater than 50-65	Greater than 45-50
D	Passing maneuvers are difficult	Greater than 65-80	Greater than 40-45
E	Passing is impossible	Greater than 80	Less than or equal to 40

* Class I highway as defined in the Transportation Research Board's *Highway Capacity Manual 2000*.

LOS F for two-lane highways would be characterized by heavy congestion and stop-and-go traffic.

The proposed Townsend-South project must also ensure an acceptable LOS under anticipated future traffic conditions. In this instance, MDT has established LOS B as its desired (target) level of service for the proposed facility under traffic conditions in the design year (2026).

The existing and future LOS on U.S. Highway 287 was analyzed using current traffic data and projected traffic data. Capacity analysis procedures outlined in the *HCM 2000* were used to evaluate existing and design year LOS in the Townsend-South project corridor. The analysis considered traffic volumes, the types of vehicles using the road, and geometric information for current conditions and anticipated conditions in the design year assuming no improvements to the route were done.

The existing two-lane highway is striped to allow for passing over about 80 percent of the 13.2 km (8.2 mile) long segment. The capacity analysis indicates that this highway section currently operates at LOS B with a PTSF of 47 percent.

Without any improvements, this section of U.S. Highway 287 is expected to operate at LOS D with a PTSF of 67 percent under 2026 traffic conditions.

2.2.5 ROADWAY DEFICIENCIES

Existing and Future Level of Service

Table 2-4: Level of

Geometric design criteria for all functional classifications associated with rural and urban highways are identified in MDT's

Geometric Deficiencies Associated with the Existing Road

Road Design Manual. The *Manual* lists appropriate design speeds for various types of terrain and presents design criteria for roadway elements (like width of travel lanes and shoulders), cut sections and fill slopes, and roadway alignment considerations (e.g. passing and stopping sight distance, grades, superelevation, and horizontal and vertical curves).

U.S. Highway 287 is a Rural Principal Arterial passing through flat terrain. The appropriate design speed for Rural Principal Arterials in level terrain is 110 km/h (70 mph). Deficiencies associated with the existing highway were identified based on a review of the geometric design criteria for a 110 km/h (70 mph) design included in *Figure 12-2: Geometric Design Criteria for Rural Principal Arterials* in the *Road Design Manual*. This review indicates that the existing horizontal and vertical alignment of the highway generally meets or exceeds 110 km/h design criteria.

However, the existing highway is too narrow based on these design standards. U.S. Highway 287 has a finished top surface width of 9.1 m (30 feet) in the project area which accommodates two 3.6 m (12 foot) wide travel lanes and two 0.9 m (3 foot) wide shoulders. According to MDT's Route Segment Plan (*Section 12 of the Road Design Manual*), the minimum paved roadway width planned for U.S. Highway 287 in the Townsend-South project area is 12.0 m (40 feet). This minimum standard paved width applies to other Rural Principal Arterials with similar ADT volumes.

In addition to the narrow road surface, the existing highway has fill slopes in the project area ranging from 5:1 to 1.5:1 and cut slopes ranging from 3:1 to 1:1. Based on MDT geometric design criteria, roadside areas with existing fill slopes steeper than 2:1 and cut slopes steeper than 1.5:1 are substandard. Parallel slopes of 3:1 or flatter are considered "traversable"-- meaning that a vehicle can safely cross the slope. Areas with steep fill slopes present safety concerns because vehicles leaving the roadway may not be able to recover and could even overturn.

Hazards exist within the clear zone of the existing highway. Roadside areas should typically be clear of any non-traversable hazards or fixed-objects. Roadside hazards are described in general terms as any roadside feature that cannot be safely impacted by a run-off-the-road vehicle. The width of roadside clear zones, the distance measured beyond the edge of the travel lane that should be clear of any non-traversable hazards or fixed-objects, varies according to the design speed, slope condition and traffic volumes of the proposed roadway.

Associated clear zone distances, as shown in *Figure 14.2A* of the *Road Design Manual*, would range from 8.0 to 12.5 m (26 to 41 feet) depending on the slope's design for this section of U.S. Highway 287. Between RP 82 and 83, wetlands with permanent standing water are located within the required clear zone.

Several of the side road approaches within the corridor create undesirable skewed intersections with the highway. Skewed

intersections limit sight distance for motorists attempting to enter onto the highway and need to be reconfigured to ensure adequate sight distance. For example, the intersection of Litening Barn Lane and Dry Creek Road at RP 83.1 needs to be realigned to form a single access at a 90-degree angle to the new highway.

2.2.6 BRIDGE DEFICIENCIES

MDT periodically conducts detailed evaluations of the condition of bridges on the state highway system and on many off-system roads. The evaluations are used to develop a Sufficiency Rating to assess the condition of each bridge. The Sufficiency Rating is a composite of several ratings of individual bridge items that consider the structural condition and geometry of the bridge. A bridge with a low rating on structural items will be designated as "structurally deficient" and a bridge with a poor rating for geometry items will be designated as "functionally obsolete." Sufficiency Ratings are based on a 100-point scale.

The bridges listed below are located within the Townsend-South project area.

<u>Structure</u>	<u>Sufficiency Rating</u>
Montana Ditch (RP 78.9)	70.8
Deep Creek (RP 80.0)	71.8
Deep Creek Overflow (RP 80.6)	70.8

MDT's records show these structures were originally built in 1931 and reconstructed in 1939. Although the Sufficiency Ratings for these bridges indicate they are not deficient, none of the existing bridges are wide enough to accommodate road widening to at least 12.0 m (40 feet).

2.2.7 ROAD CONDITION

The existing roadway in the Townsend-South project area was constructed in 1939, and received an overlay with seal and cover in 1979. Pavement maintenance and other activities are routinely completed by MDT to preserve the facility.

As indicated earlier, the subgrade beneath the existing highway has high moisture levels. The subgrade, the in-place soil under the road surface, must be able to support loads transmitted from the pavement structure. Moisture content, the degree of compaction, and the type of soil found in the subgrade are all factors that affect the road's load bearing capacity. High moisture in the subgrade can reduce the strength and stiffness of the aggregate base materials beneath the road surface, contributing to pavement failures like rutting and potholes.

Reconstruction is necessary to stabilize the subgrade of the road. A centerline soil survey performed by MDT during 1991 showed that 15 of the 21 test holes dug for the centerline soil survey showed moisture levels in the subgrade in excess of optimum levels. The most likely sources of the very high subgrade moisture are high groundwater and lateral seepage

from drainage ditches or standing water areas adjoining the road.

MDT periodically collects information on the condition of the pavement surfaces on Montana's roadways and developed a "ride index" to assess their relative condition. The Ride Index is based on a 0-100 scale, with scores of 80 to 100 being "good"; 60 to 79.9 being "fair"; and 0-59.9 being "poor." The section of U.S. Highway 287 between RP 78.3 and RP 88.4 was assigned a Ride Index of 81 by MDT's 2002 ride survey data placing it in the low end of the good category.

2.2.8 TRAFFIC SAFETY

Accident summaries were reviewed to help understand the accident history of the project area during the ten-year period from January 1, 1994 through December 31, 2003. The roadway section covered in the accident analysis is between RP 78.1 and 86.3.

TABLE 2-5 summarizes motor vehicle accident statistics for the project study area. These statistics are also compared to the statewide averages for rural sections of Non-Interstate NHS routes on the Primary system during the 1999-2003 period.

**Table 2-5: Vehicle Crash Summary
(1994-2003)**

Accident/Severity Measures	Townsend-South Corridor	All Non-Interstate NHS Primary Routes (Rural) *
Number of Fatal Accidents (# fatalities)	2 (4)	N/A
Total Number of Reported Accidents	93	N/A
Accident Rate (All Vehicles)	0.98	1.30
Severity Index (All Vehicles)	2.24	2.32
Severity Rate (All Vehicles)	2.20	3.02
Truck Accident Rate**	0.45	1.15

* Rates for 1999-2003 period N/A – Not Applicable

** Truck accident rates are for the July 1, 1992 through June 30, 2002 period.

As **TABLE 2-5** shows, the overall accident rate for the Townsend-South corridor was calculated to be 0.98 crashes per million vehicle miles of travel (MVMT) over the 1994-2003 period. This compares to a statewide average of 1.30 crashes/MVMT for all rural areas of Non-Interstate NHS routes on the Primary system during the past five years.

The severity index and severity rate are statistics commonly used by MDT as measures of the overall severity of accidents on a particular road segment or route based on the number and degree of injuries or fatalities recorded during a given period. The severity index is the ratio of the sum of fatal accidents and

Corridor Accident History

incapacitating injury accidents times 8, plus the number of other injury accidents times 3, plus the number of property damage accidents to the total number of accidents. The severity rate of 2.20 is was also lower for Townsend-South during the study period, compared to a statewide average index of 3.02.

A review of the characteristics and contributing factors to motor vehicle crashes occurring within the Townsend-South project area during a recent 10-year study period identified the following variations in relation to statewide occurrences:

- 70.4% property damage only accidents vs. 58.4% statewide rural
- 76.1% dry road condition vs. 64.3% statewide rural
- 62.0% clear weather vs. 48.6% statewide rural
- 28.2% collisions with wild animals vs. 12.7% statewide rural
- 20% of the crashes involved vehicle rollovers

The section of U.S. Highway 287 between RP 83.0 and 83.6 was identified as an accident cluster area in 1988. A review of this area resulted in no feasible counter measures to address a specific accident trend.

Twenty-two of the 27 collisions with wild animals in the project area during the study period occurred during dawn, dusk, or darkness. While collisions with wild animals occurred throughout the project, six of these accidents occurred between RP 80.9 and 81.2.

2.2.9 ACCESS MANAGEMENT NEEDS

Access management involves the establishment of guidelines for managing access points and spacing along a highway, adding turn lanes, incorporating turning restrictions, consolidating accesses, eliminating unnecessary accesses and implementing traffic control measures to maintain the desired operational characteristics of the highway. The goals of access management are to improve the safety, function, and operation of the roadway, and to ultimately provide a traffic facility that better serves both local and regional users.

The existing highway corridor lacks access control. There are more than 60 side road approaches intersecting with U.S. Highway 287 in the Townsend-South project area, the majority of which come from the east side of the highway. Only three of the approaches are for public roads. To enhance traffic safety and ensure the highway operates efficiently, access to the highway needs to be managed and some underused approaches in the corridor need to be consolidated or even closed.

2.3 OVERALL CONCLUSIONS ON NEED

The existing roadway is nearly 65 years old and many of its associated features do not comply with MDT's current geometric design standards. Most notably, the width of the road does not meet the minimum paved roadway width of 12.0 m (40 feet) for Rural Principal Arterials with similar traffic volumes. The highway also has numerous areas with steep roadside slopes. The accident history for a recent ten-year period shows that steep roadside fill slopes are an important concern as one-fifth of all the reported motor vehicle crashes in the project corridor during the period involved vehicles that overturned after leaving the roadway surface.

Further, three of the bridges on the route are not wide enough to accommodate a 12.0 m (40 feet) wide roadway. These key deficiencies are related to the design of the roadway and can be corrected only through reconstruction.

Reconstructing the Townsend-South segment of U.S. Highway 287 as proposed would bring the design of the highway into compliance with MDT's current design standards for Rural Principal Arterials with design speeds of 110 km/h (70 mph). The width of the roadway's surface within the project area would be increased to at least 12.0 m (40 feet) consistent with the minimum paved roadway width for Rural Principal Arterials with similar traffic volumes specified in MDT's Route Segment Plan.

The average daily traffic on this route has increased notably in recent years due to development within this region of Montana. Traffic on this route is expected to continue increasing at nearly 5 percent per year over the next two decades. The level of service (LOS) evaluations for this project suggest that without improvements to increase the road's capacity, U.S. Highway 287 would function at an undesirable LOS D by 2026. This expected level of operation is well below MDT's target level of service is (LOS B) in the design year.

The subgrade of the existing highway has high moisture levels that may contribute to future pavement problems or failures. MDT concluded that reconstruction of the roadway incorporating methods and materials to stabilize the subgrade is necessary to remedy this problem.

The existing highway corridor lacks access control and has more than 60 side road approaches that intersect the highway in the project area. Access management is needed within the project corridor to eliminate unsafe access points and reconfigure or close underused accesses. Access management is necessary to help preserve the capacity of the roadway and enhance safety for road users over the foreseeable future.

PHOTO PLATES 3 and 4 illustrate deficiencies associated with the existing facility or other "needs" that would be addressed through the implementation of this proposed project.

Photo Plate 3: Roadway Deficiencies Townsend-South Project Corridor

Photograph 1:

The existing road is only 9.1 m (30 feet) wide. MDT's standards show that the minimum width for the road should be at least 12 m (40 feet). The current facility does not have any auxiliary turn lane provisions and lacks access control.



Photograph 2:

This photograph shows steep roadside slopes and clear zone obstructions that exist along the highway.



Photo Plate 4: Roadway Deficiencies Townsend-South Project Corridor

Photograph 1:

Three bridges within the project area are more than 70 years old and only about 11 m (36 feet) wide. The bridges are too narrow to accommodate a new road at least 12 m (40 feet) wide in accordance with MDT's standards.



Photograph 2:

Traffic demands suggest the need for increased capacity and additional passing opportunities within the project area.



PART 3.0: Alternatives Considered

PART 3.0: Alternatives Considered

This PART describes the alternatives considered to address the transportation and other needs identified in PART 2.0. Alternatives are the various activities or actions that could be implemented by MDT to meet the purpose and the need for improving U.S. Highway 287 within the Townsend-South project area. Alternatives considered include various road alignments and designs and the option of taking no action to improve this road segment.

3.1 INTRODUCTION

The Townsend-South project would reconstruct 13.2 km (8.2 miles) of U.S. Highway 287 south of Townsend. A variety of preliminary engineering activities and studies have been completed to establish the use and condition of the existing facility and to evaluate how the present road complies with MDT's design standards for Rural Principal Arterials with design speeds of 110 km/hr (70 mph). The "action" alternatives considered for this proposed project are comprised of actions and measures to:

- eliminate deteriorated conditions and replace substandard road features;
- enhance the overall safety and efficiency of the highway; and
- ensure the reconstructed highway is responsive to its current and future roadside environment and uses.

This PART describes the proposed improvements that comprise the Preferred Alternative. The "Preferred Alternative" is the alternative that MDT believes would best meet the purpose and need for the project, giving consideration to economic, environmental, technical factors, and public sentiment. Other alternatives considered for the Townsend-South reconstruction project and reasons for rejecting such alternatives are disclosed in this PART.

The alternative of taking no action to improve U.S. Highway 287 was also considered. The No Action Alternative does not meet the purpose and need for the project as described in PART 2.0. Also, the No Action Alternative does not address geometric deficiencies associated with the existing road and offers no way to improve the operation and safety of the facility. The No Action Alternative does, however, provide a baseline against which the Preferred Alternative (or other alternatives) can be compared. The environmental effects of the No Action Alternative will be discussed in PART 4.0 as a means of comparing and contrasting the impacts of the Preferred Alternative.

3.2 NO ACTION ALTERNATIVE

The No Action Alternative (also known as the No Build Alternative) involves taking no major actions to improve or change U.S. Highway 287 between Townsend and Toston. MDT would maintain and repair the road and its associated features as needed to ensure continued public use.

However, this alternative would not change the horizontal or vertical alignment of the highway, increase its width of the roadway, replace bridges or drainage features, or include any measures to address identified needs for operational improvements. The geometric layouts at county road intersections, like the skewed configuration at the highway's intersection with Litening Barn/Dry Creek Road, would not be realigned or improved. The highway would continue to be substandard in width based on MDT's geometric design criteria for Rural Principal Arterials and the volume of traffic using the route.

The costs of this alternative would be those associated with continuing maintenance activities and repairing the roadway and its features. Maintenance costs would likely increase as the existing road continues to deteriorate. Given the identified subgrade moisture problems, deterioration of the road surface could occur at an accelerated rate when compared to roads with good subgrade conditions.

Other than minor, temporary and localized adverse environmental effects, the No Build Alternative would not cause any new impacts to the surrounding environment in the Townsend-South project area. There would be no new impacts on adjacent land uses since this alternative would not change access to adjoining lands or require the acquisition of any new right-of-way. There would be no change to the appearance of the highway corridor.

3.3 PREFERRED ALTERNATIVE

3.3.1 OVERVIEW

The Preferred Alternative is to reconstruct U.S. Highway 287 south of Townsend from RP 78.1 to RP 86.3. Transitions to and from the existing roadway north and south of the project area would be required. The proposed reconstruction project would revise the existing two-lane facility to include wider paved shoulders, turn lanes, passing lanes, and improved geometric layouts at major intersections. The proposed project would reconstruct the existing roadway to provide an improved driving surface and safer road for highway users. The new highway, with a multi-lane configuration in some areas, would substantially enhance traffic operations when compared to the existing facility.

Reconstruction of U.S. Highway 287 would require the development of detailed design and right-of-way plans and the preparation of an access control plan for the project area.

MDT's Geometric Design Standards (set December 4, 1992) set design standards for highway reconstruction and construction

projects. These standards guide the modernization and addition of capacity that occurs during the reconstruction of highways.

Geometric standards are based on design policies and guidelines established by MDT and AASHTO. The project would be developed to conform to MDT's *Road Design Manual* and "Bridge Design Standards" and to AASHTO's Standard Specifications.

New right-of-way would be acquired over the length of the project. Site preparation work would include relocating conflicting utilities and clearing and grading to construct a new foundation for the highway. Drainage structures with adequate roadside ditches to accommodate runoff from the roadway would be installed and slopes would be stabilized and revegetated. New fences would be installed at the new right-of-way limits.

The existing bridges over the Montana Ditch (RP 78.9), Deep Creek (RP 80.0), and the Deep Creek Overflow (RP 80.9) would be replaced with new structures. Culverts and irrigation siphons beneath the highway would be modified or replaced to accommodate the wider roadway.

Advisory and regulatory signs, as well as appropriate pavement markings would be installed according to standards outlined in the *Manual on Uniform Traffic Control Devices* (MUTCD). Guardrail would be placed in locations warranted by the presences of roadside obstacles or steep slope conditions.

Estimated current construction costs for the proposed Townsend-South project would total about \$11.8 million, including traffic control during construction and construction engineering. Traffic would be maintained on the route during construction and appropriate staging, signing, flagging, and traffic controls would be implemented to minimize delays and inconveniences for highway users.

3.3.2 DESIGN SPEED/POSTED SPEEDS

Horizontal and vertical alignments as well as all other design features for U.S. Highway 287 in the Townsend-South project area would be designed to meet the requirements for a design speed of 110 km/hr (70 mph). This design speed is consistent with standards for Principal Arterial routes in level terrain as outlined in MDT's *Road Design Manual*.

Current posted speed limits in the rural areas would remain unchanged with the Preferred Alternative. A speed reduction zone is proposed at the beginning of the project for northbound motorists approaching the Townsend City Limits.

3.3.3 DESIGN YEAR LOS TARGET

The proposed Townsend-South project must also ensure an acceptable LOS under anticipated traffic conditions in the design year (2026). MDT has established LOS B as its desired level of service for the proposed facility from the opening of the project to the design year. This LOS target is consistent with geometric

design criteria for Principal Arterials (National Highway System-Non-Interstate) located in level or rolling terrain as outlined in *Figure 12-3 of the Road Design Manual*.

3.3.4 HORIZONTAL AND VERTICAL ALIGNMENTS

Horizontal Alignment. The proposed road would be designed to closely parallel the existing horizontal alignment of U.S. Highway 287 through the project corridor. From the Townsend city limits to approximately RP 78.7, the centerline of the new road would closely follow that of the existing highway. South of RP 78.7, the centerline would be shifted about 10 m (33 feet) to the east and would parallel the existing road to about RP 83.5 (near the highway's crossing of Dry Creek). South of RP 83.5, the new road's centerline would be shifted to the west and parallel the east shoulder of the existing road to RP 86.1. A 0.3 km (0.2 mile) long connection would be used to transition the new road to the existing highway at RP 86.3.

The proposed alignment shift to the east would facilitate traffic during construction and retain most of the existing road's base. The proximity of the Montana Rail Link Railroad and a fiber optic telephone cable installation between the highway and railroad were additional factors in the decision to shift the alignment of the new highway slightly to the east. The existing highway easement is already less than Montana Rail Link's minimum offset distance of 36.6 m (120 feet) and rebuilding the road closer to the railroad highway would compromise safety at railroad crossings. Therefore, shifting the new road slightly to the east allows MDT to maintain the existing offset distance between the highway easement and centerline of the mainline railroad track.

Vertical Alignment. The vertical alignment of the new road would be similar to that of the existing roadway although it may be raised slightly in areas of new pipe or structure installations. Adjustments to the vertical alignment would be made to ensure desirable stopping sight distance and passing zones. The "sag" in the vertical alignment at RP 83.4 would be raised to improve sight distance. Grades on the reconstructed highway would generally be less than 0.5 percent throughout the project corridor.

3.3.5 DIRECTIONAL PASSING LANES

Auxiliary passing lanes can also be used to improve traffic operations on two-lane highways. Passing lanes are added lanes provided in one or both directions of travel on a two-lane, two-way highway to breakup traffic platoons (groups of closely spaced vehicles traveling in the same direction) and to improve passing opportunities.

Truck-climbing lanes are one type of passing lane used on steep grades to provide passenger cars with an opportunity to pass slow-moving trucks. Passing lanes other than truck-climbing

lanes are frequently incorporated to enhance the operation of two-lane facilities. The need for such auxiliary passing lanes is typically determined through an engineering study that includes professional judgment, operational experience and a LOS (capacity) analysis.

Steep grades do not exist within the Townsend-South project area and truck-climbing lanes are not warranted. However, the Preferred Alternative would provide passing lanes in both directions at three locations to enhance the level of service within the project corridor. The approximate locations and lengths of the proposed passing areas are listed below:

<u>Passing Lane Location</u>	<u>Length of Passing Lane Area</u>
RP 80.0 to 81.4	1.8 km (1.1 miles)
RP 82.7 to 83.9	1.9 km (1.2 miles)
RP 84.9 to 86.3	2.3 km (1.4 miles)

The passing lane segments would be strategically located to minimize wetland impacts and occur near county roads where practicable.

3.3.6 INTERSECTIONS/APPROACHES

Public and private approaches would be designed and reconstructed to fit local conditions and in a manner that would ensure safe entry and exit from the highway. Approaches would typically be aligned to intersect the roadway at angles between 75 and 90 degrees to provide adequate sight distance. MDT proposes to pave public and private approaches to the right-of-way line. Farm field approaches (those providing access only to pasture or farmland) would receive a 3.6 m (12 feet) wide paved strip and gravel surfacing to the new right-of-way line. Slopes for approaches would be designed to current MDT standards. MDT would install drainage culverts beneath these approaches but landowners would be responsible for maintaining the culverts.

The Preferred Alternative would generally maintain the location and layout of all public road approaches. Left turn lanes for southbound motorists would be provided at the route's intersections with Lower Deep Creek Road (RP 79.5), Shelley Road (RP 80.9), and Litening Barn Lane/Dry Creek Road (RP 83.1). The skewed configuration of Litening Barn Lane/Dry Creek Road intersection would be realigned to form a single approach at a 90-degree angle to the new highway.

The public approach at RP 81.5 provides access to the York's Islands Fishing Access Site. This approach would be perpetuated but a left turn lane for northbound traffic would not be warranted at this location.

3.3.7 TYPICAL ROAD CROSS-SECTIONS

MDT's Route Segment Plan calls for a 12.0 m (40 feet) or wider finished top width for U.S. Highway 287. Consistent with this recommendation, a new facility with a 12.0 m (40 feet) finished

top width accommodating two 3.6 m (12-foot) wide driving lanes and two 2.4 m (8-foot) wide shoulders would be provided over a substantial portion of the project area. The proposed design would also incorporate a variety of other typical sections over its length including a two-lane with center median or left turn lane and four-lane passing areas and four-lane passing areas. Because some left turn lanes fall within the areas where passing lanes are proposed in both directions, the resulting typical section would include five-lanes.

Travel lanes and passing lanes would typically be 3.6 m (12 feet) wide. Center turning lanes would be 3.6 m (12 feet) wide except at the north end of the project where the center turn lane would be 4.2 m (14 feet) wide. Shoulders would typically be 2.4 m (8 feet) wide except at the north end of the project where the shoulders would be 0.6 m (2 feet) wide. The finished top width of the proposed road's surface would range in width from 12.0 m (40 feet) in areas with an undivided two-lane cross-section to 22.8 m (76 feet) in four-lane passing areas with left turn lanes.

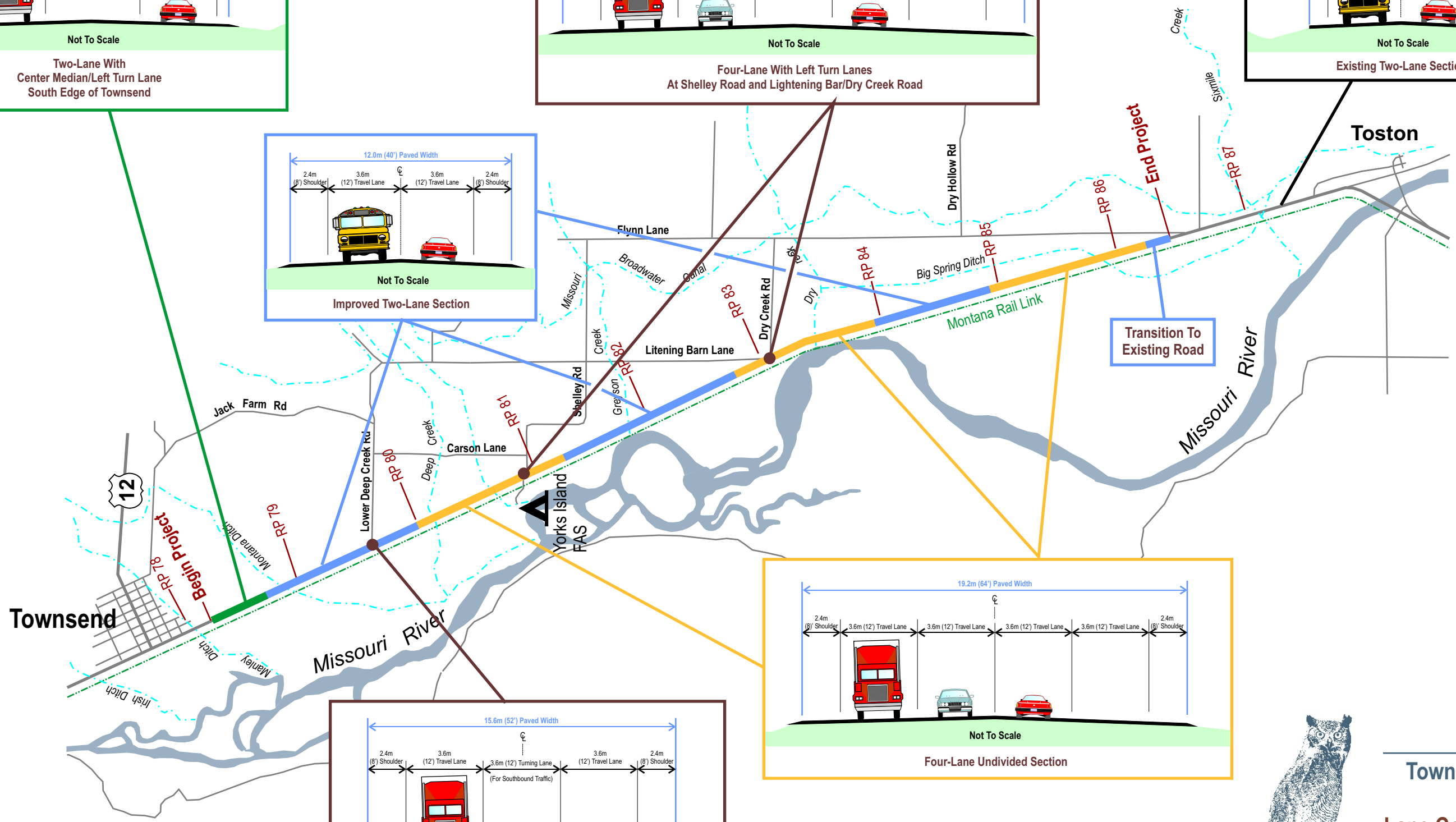
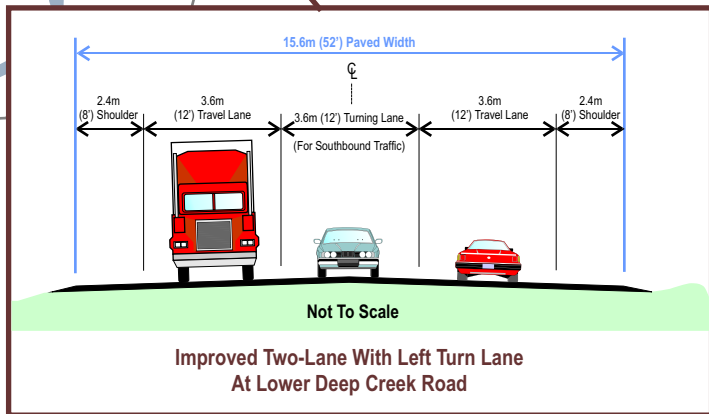
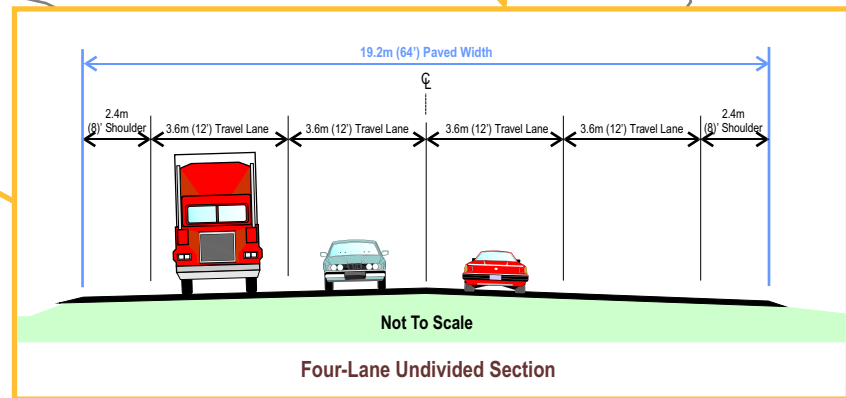
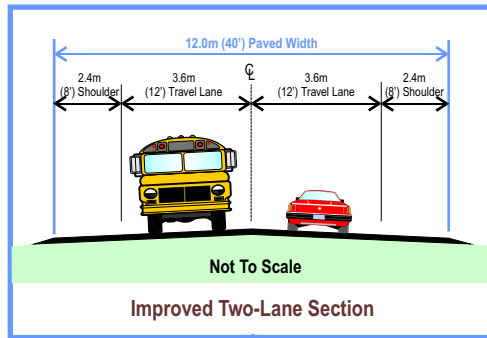
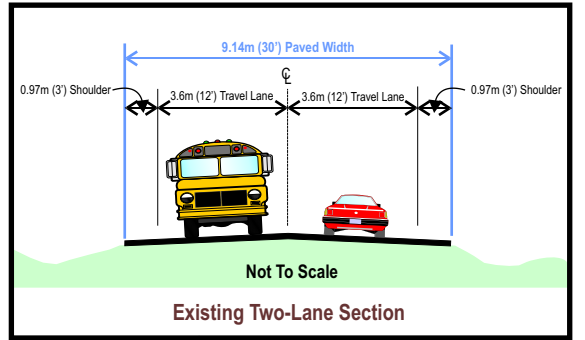
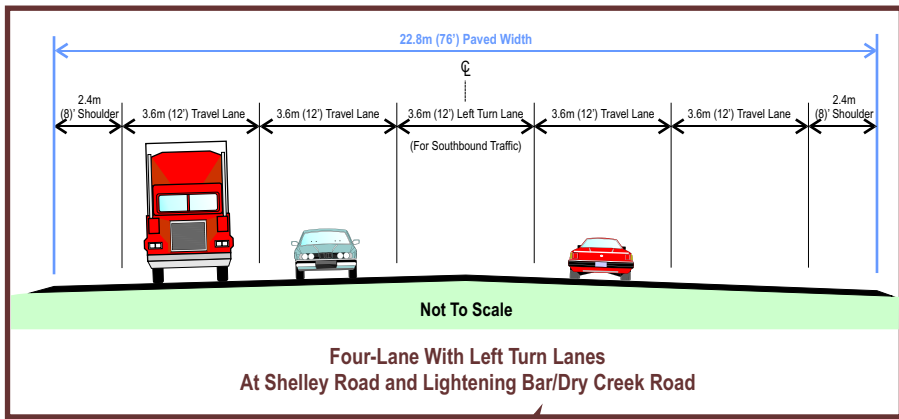
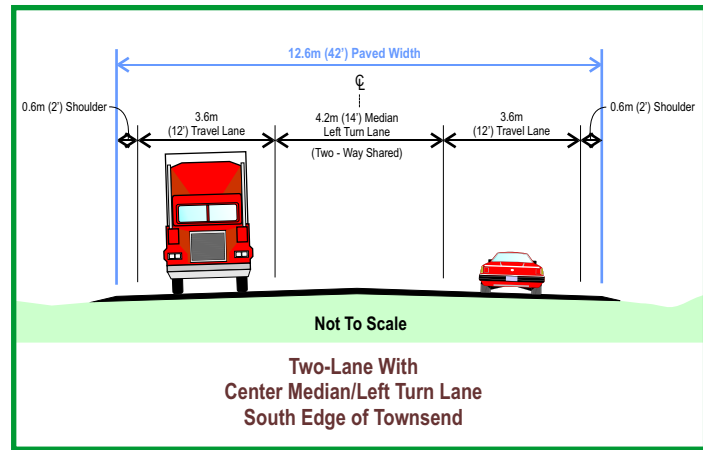
FIGURE 3 shows where these various lane configurations would be constructed within the corridor.

Surfacing Design. The reconstructed highway would be built with a plant mix bituminous (asphalt) surface over the top of a crushed gravel base course. Surfacing depths would be determined after the completion of detailed soils investigations and pavement design activities. The pavements of the new road would be designed to last for at least 20 years with regular maintenance and preservation activities based upon anticipated traffic volumes, vehicle loadings, and underlying soil conditions.

Rumble Strips. Rumble strips would be installed in accordance with MDT's current policy that calls for 300 mm (1-foot) long rumble strips to be cold-milled at an offset of 150 mm (6 inches) outside the edge of traveled way (shoulder stripe).

Roadside Slopes and Grading. Typically, the new road would be designed with 6:1 slopes immediately adjacent to the road and with other standard cut and fill slopes specified in MDT's *Road Design Manual (Figure 12-3: Geometric Design Criteria for Rural Principal Arterials)*. A 6:1 slope means that for every six units of measure (meters or feet) away from the edge of the road, the elevation of the roadside would decrease by one unit.

The design of roadside slopes may vary from the standards in specific areas of the project as efforts are made to avoid or minimize impacts to delineated wetlands or to reduce right-of-way impacts.



Townsend - South
Figure 3
Lane Configurations
Preferred Alternative

3.3.8 BRIDGES/CULVERTS/IRRIGATION FACILITIES

Reconstruction of U.S. Highway 287 in the Townsend-South corridor would affect three bridges: the Montana Ditch crossing at RP 78.9, the Deep Creek crossing at RP 80.0, and the Deep Creek Overflow crossing at RP 80.6. These existing structures would be replaced with new bridges, box culverts or pipes depending upon the hydraulic requirements and environmental considerations at each crossing.

Where needed, the Preferred Alternative would also replace or modify all other existing drainage culverts and irrigation siphons.

3.3.9 ACCESS CONTROL/MANAGEMENT

Limited access control and access management would be incorporated as part of the proposed Townsend-South reconstruction project. Access management has been proposed for this route as a means of helping to control traffic congestion, conflicts, and motor vehicle accidents over the project's design life.

Access management involves the establishment of guidelines for managing access points and spacing along a highway, adding turn lanes, incorporating turning restrictions, consolidating accesses, eliminating unnecessary accesses and implementing traffic control measures to maintain the desired operational characteristics of the highway. The goals of access management are to improve the safety, function, and operation of the roadway, and to ultimately provide a traffic facility that better serves both local and regional users. MDT would ensure that all residents or businesses have reasonable access to their properties.

MDT would prepare an Access Management Plan and a set of plan drawings showing the specific location, configuration, ownership, land use type, and level of use (volume) for each individual property access within the corridor. The intent of the Access Management Plan would be to identify and perpetuate necessary existing access points; shift or combine approaches where practical; and eliminate unneeded approaches.

Whenever practicable, existing accesses would be made to conform to the guidelines set forth in the Access Management Plan. Future new accesses, subdivisions, or changes in use would be required to meet the guidelines specified in the Plan. MDT would administer the Access Management Plan and be responsible for all decisions on access requests.

3.3.10 RIGHT-OF-WAY AND UTILITIES

New right-of-way would be required over the length of the project corridor to build the proposed highway improvements. As indicated earlier, the Montana Rail Link Railroad parallels

U.S. Highway 287 throughout much of the corridor. The proximity of the railroad and safety considerations at railroad crossings necessitate that MDT maintain the west right-of-way limits for the highway at its current location. Temporary construction permits would be used to build generally non-critical improvements (like slope adjustments) beyond the permanent right-of-way for the highway.

Overhead power lines, buried telephone lines, and other utilities in conflict with the proposed highway reconstruction would be relocated. A fiber optic cable is buried west of the existing right-of-way between the highway and the railroad line throughout the entire corridor. Care would be taken during the design and reconstruction of the highway to avoid impacting the fiber optic cable due the high costs associated with repairing damages to such lines.

The Preferred Alternative would replace existing fencing impacted by the proposed highway construction. MDT would coordinate fencing needs with affected landowners during the right-of-way negotiation and design phases of the project.

Landscaping, other than applying topsoil, seed and fertilizer along the roadway is not proposed as part of the Preferred Alternative. However, MDT would work with the owners of residential or commercial properties along U.S. Highway 287 to remedy potential impacts to existing landscaping that may result from the proposed construction project. Remedies could include moving affected landscape features, providing similar replacement landscaping, or providing financial compensation to landowners for impacts.

3.4 ALTERNATIVES DEVELOPMENT

The identification and analysis of alternatives are important elements of the NEPA process. Consideration of alternatives helps identify a solution that satisfies the transportation need and protects environmental and community resources. The alternatives developed must relate to the underlying purpose and need for undertaking the proposed action.

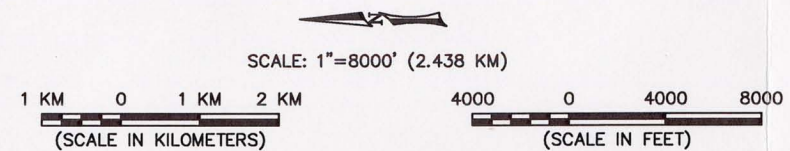
FIGURE 4 shows the alternate alignments that were identified and considered for U.S. Highway 287 south of Townsend. These alignment alternatives included moving the highway to a new location west of the Missouri River, reconstructing the highway east of the present corridor, and rebuilding the highway on or near the present road. Changes in the location of U.S. Highway 287 were examined primarily as a means to avoid extensive wetlands within the existing Townsend-South project corridor.

A range of potential design options for highway reconstruction in the Townsend-South corridor were also developed to represent design modifications that could be implemented to incrementally increase the capacity of the existing highway. These options consist of variations in the highway's cross-section elements and generally refer to the combination of through lanes and passing or turning lanes incorporated into the potential design. The



USGS AERIAL PHOTOGRAPH (DOQQ) OBTAINED FROM
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INFORMATION SYSTEM, HELENA, MONTANA

— — — — — PREFERRED ALIGNMENT



ALTERNATE ALIGNMENTS
CONSIDERED

Figure 4

alternate designs considered for this proposed action are discussed later in this PART.

3.5 ALTERNATIVES SCREENING

Alternatives screening provides a means of reducing the range of potential alternatives by comparing them to a set of specific criteria. The screening criteria typically respond to various aspects of the purpose and need for the proposed action. Alternatives that favorably address the criteria are candidates for more detailed study. Alternatives that were not responsive to the purpose and need or have other fatal flaws (like excessive costs, unacceptable environmental or community impacts, etc.) can be eliminated from further consideration through the screening evaluation.

For this proposed action, screening criteria were established for both route location and road design alternatives. The location and road design alternatives developed for this proposed project were screened against the criteria presented in **TABLES 3-1** and **3-2** to identify reasonable alternatives.

The location and design alternatives identified were evaluated with respect to the screening criteria. As a result, several location and road design alternatives were not advanced for further consideration in the EA. Those alternatives eliminated from consideration are discussed in the following sections.

Table 3-1: Screening Criteria for Location Alternatives

SCREENING CONSIDERATIONS	SPECIFIC EVALUATION CRITERIA
Consistency With Pertinent Policy Goals of TranPlan 21	<p>Consistent with the following goals of TranPlan 21?</p> <ul style="list-style-type: none">• <u>Econ Development Goal A</u> - Preserve the efficient functioning of the transportation system used by Montana's export-oriented industries to access regional, national, and international markets.• <u>Econ Development Goal B</u> - Monitor and <u>address</u> capacity needs arising from Montana's economic growth trends.• <u>Traveler Safety Goal A</u> - Reduce the number and severity of traffic crashes on Montana's roadways.• <u>Access Management Goal A</u> - Improve corridor level access management to preserve the highway system• <u>Bicycle and Pedestrian Transportation Goal B</u> - Target bicycle and pedestrian improvements to account for differences in current and future use. (Improved bicycle and pedestrian facilities through incorporation in existing projects).• <u>Roadway System Performance Goal A</u> - Establish specific priorities for roadway improvements. First priority to preserve Montana's existing system; Second Priority to add capacity and improve mobility.• <u>Roadway System Performance Goal B</u> - Preserve mobility for people and industry in Montana.

Table 3-1: Screening Criteria for Location Alternatives

SCREENING CONSIDERATIONS	SPECIFIC EVALUATION CRITERIA
Consistency With Applicable Goals of Broadwater County Growth Policy	<p>Consistent with following goals of the Broadwater County Growth Policy?</p> <ul style="list-style-type: none"> • <u>Transportation Goal 2</u>: Provide an efficient and functional transportation network that will adequately handle present and expected traffic. • <u>Growth and Land Use Goal 2</u>: New development must be designed to minimize the public costs of providing services, and minimize or prevent public health or safety hazards. • <u>Growth and Land Use Goal 3</u>: New development must be designed to prevent interfering with, or diminishing the efficiency and management of agricultural operations. • <u>Growth and Land Use Goal 5</u>: Discourage new land development on key, productive agricultural lands that are critical to the vitality of Broadwater County's economy; Encourage new growth to locate near existing communities, where services can be efficiently provided, and the loss of agricultural and forest land is minimized.
System Impacts	<p>Would implementation preclude or otherwise affect MDT's future ability to improve U.S. Highway 287 at the Missouri River crossing at Toston?</p> <p>Vehicle miles of travel and/or travel times would be improved.</p> <p>Would accommodate pedestrian/bicyclist use on route.</p> <p>Would enhance overall safety of route.</p>
Feasibility/Initial Construction Costs/Affordability	<p>Alternative must have a feasible construction cost.</p> <p>Alternative must be feasible to implement.</p> <p>Range of cost per mile for construction and implementation.</p> <p>Operating costs over time.</p>
Maintenance Obligations	<p>Would the alternative require MDT or Broadwater County to maintain additional lengths of paved roadway?</p> <p>Result in substantially increased annual maintenance costs?</p>
Economic and Social	<p>Does the location option bypass Townsend?</p> <p>Would the location option alter the location, distribution, density, or growth rate of the human population in the area? Would the location option alter or interfere with the productivity or profitability of the existing land use in the area?</p> <p>Would the location option result in a need for new facilities or substantial alterations to any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?</p> <p>Would the location option alter the "character" of the community or neighborhood? (Require relocations or substantially disrupt agricultural operations/farmland)</p>
Impacts to the Environment	<p>Would the alignment result in an overall detraction from the quality of the area's environmental resources such as:</p> <ul style="list-style-type: none"> a. Wetlands? b. Floodplains? c. Ecological/wildlife habitat? d. Historical and archeological resources? e. Threatened and endangered species? f. Prime or unique farmlands? g. Water quality?

Table 3-2: Screening Criteria for Design Alternatives

SCREENING CONSIDERATIONS	SPECIFIC EVALUATION CRITERIA
Consistent with MDT Route Segment Plan?	<p>The design provides at least 40' wide paved road.</p> <p>Alternative would provide design features consistent with those of adjoining segments of the route.</p> <p>Would implementation of the design preclude or otherwise affect MDT's future ability to improve U.S. Highway 287 south of the Townsend-South corridor.</p>
Eliminate/Reduce Roadway Deficiencies	<p>Design alternative must be consistent with MDT Design Standards for Rural Principal Arterials by:</p> <ul style="list-style-type: none"> a. Improving the road's horizontal and vertical alignments b. Increasing roadway's width c. Flattening roadside slopes and providing adequate clear zones. d. Improving accommodations for bicyclists and pedestrians.
Replace/Rehabilitate Highway Infrastructure	<p>Improve overall condition of transportation facility and replace outdated features (e.g. bridges).</p>
Improve Traffic Operations	<p>Alternative must provide an acceptable Level of Service in the design year. MDT's target level of service for this highway improvement project is LOS B for a period from the opening of the project to the design year.</p> <p>Alternative must provide increased passing opportunities within the Townsend-South corridor.</p> <p>Alternative would provide access management in the corridor</p>
Enhance Traffic Safety	<p>Alternative must improve vehicular safety.</p> <p>Reduce opportunities for traffic conflicts within the corridor</p> <p>Include access management and control</p> <p>Reduce number of non-standard features or other physical deficiencies associated with the transportation facility</p>
Effects on the Human Environment	<p>Will the implementation of the design result in notable effects to the land uses, cultural features, and human activities in the project corridor?</p>
Effects on the Natural Environment	<p>Will the implementation of the design notably degrade the quality of the environmental resources in the project area? The following resources were considered:</p> <ul style="list-style-type: none"> a. Wetlands? b. Floodplains? c. Ecological/wildlife habitat? d. Threatened and endangered species? e. Prime or unique farmlands? f. Water quality?

3.6 LOCATION OPTIONS CONSIDERED BUT REJECTED

3.6.1 REBUILD U.S. HIGHWAY 287 WEST OF THE RIVER

U.S. Highway 287 could be reconstructed on a new location west of the Missouri River in the Townsend to Toston area. Two preliminary alignment options, identified as Options A and B, were developed and analyzed. These options (previously shown in **FIGURE 4**) are described in more detail below.

Option A would depart from the existing alignment of U.S. Highway 287 about 10.5 km (6.5 miles) southwest of Toston. The alignment would follow existing county roads (Hossfeld Lane, Ferrat Lane, and River Road) for about 14.5 km (9 miles) before reaching the bluffs west and southwest of Townsend. The alignment of Option B would generally follow River Road, an existing road paralleling the Missouri River, and rejoin the existing alignment about 8 km (5 miles) north of Townsend.

Option B's alignment departs from the existing road about 4.8 km (3 miles) southwest of Toston at Rauser Lane and continues on a northwest to southeast alignment to join River Road and the alignment of Option A before reaching the bluffs west and southwest of Townsend.

Option B attempts to reduce the length of the new alignment by more closely paralleling the course of the Missouri River. It also attempts to skirt the wetland areas presumed to exist within the Indian Creek, Crow Creek-Swamp Creek-Springs Creek drainage.

In addition to avoiding the wetlands in the Townsend-South project corridor, the principal benefits offered by shifting the road's alignment to the west side of the Missouri River would be the elimination of the need for two major bridges on the route - the Missouri River bridges at Toston and just north of Townsend. Further, since U.S. Highway 287 would no longer pass through Townsend, through traffic movements on the highway may be facilitated since there would be no need to slow down or stop in Townsend.

Although rebuilding U.S. Highway 287 west of the Missouri River in the area south of Townsend offers advantages, Options A and B were dropped from consideration because they would dramatically increase the scope and cost of highway improvements within the corridor. Options A and B would require rebuilding about 30 to 35 km (18.6 to 21.5 miles) of U.S. Highway 287, some 17 to 22 km (10.6 to 13.5 miles) more reconstruction than associated with the Preferred Alternative. The associated higher costs of reconstructing U.S. Highway 287 west of the river (estimated to be some \$15 to \$20 million more than the Preferred Alternative) would inhibit and delay MDT's ability to make improvements to the route.

Shifting to the other side of the river would also likely commit MDT to undertake and implement one massive project. Without the provision of temporary crossings of the Missouri River and

Montana Rail Link Railroad linking new construction with the existing highway, staged construction of several shorter projects on the new route would offer no immediate benefits to facility users.

Shifting the alignment of U.S. Highway 287 to a location west of the Missouri River would also dramatically increase the amount of road MDT would be obligated to maintain. Since access must be perpetuated to lands and uses adjoining the existing highway south of Townsend, it is unlikely that the old highway would be totally abandoned. Due to the cost, it is doubtful Broadwater County would choose to assume responsibility for maintaining the old highway. Therefore, MDT would be obligated to continue maintenance on 22 to 29 km (13.7 to 17.7 miles) of the old route and the entire length of the new route.

Another fundamental reason for the rejection of Options A and B is that these alignments bypass the community of Townsend. According to **60-2-211, M.C.A.**, MDT “may not construct highway bypasses or highway relocation projects without prior consent of the governing body of an incorporated municipality.” MDT has not requested a resolution from the governing body of the Town/City of Townsend expressing their consent or consent or refusal to be bypassed. However, it is clear that many highway-oriented businesses in Townsend could experience adverse economic effects if a substantial amount of traffic (and potential customers) were diverted to a new route around the community. For this reason, MDT believes local government would not approve a bypass route.

Concerns also exist about the environmental effects associated with Options A and B since new construction would occur in areas not previously disturbed by major transportation corridors. Major amounts of new right-of-way would be required and potential exists to sever or disrupt the use of agricultural lands. The rugged terrain present in the area southwest of Townsend also suggests that notable cuts and fills may be necessary, potentially increasing the area of disturbance and visual scarring on the landscape. Notable wetland areas and surface waters could also be encountered where the new alignment crosses Warm Springs, Crow, Swamp, and Spring Branch Creeks near the south end of the alignment.

Options A and B would require that a major new intersection for U.S. Highways 12 and 287 be provided north of Townsend. Developing a safe intersection design could be challenging at the northern terminus of the alignment due to the topography, the skewed alignment of the roads, and a required grade separation for the Montana Rail Link Railroad.

For the reasons summarized above, reconstructing U.S. Highway 287 west of the Missouri River in the Townsend to Toston area was dropped.

APPENDIX E presents detailed information about Options A and B and summarizes the anticipated environmental effects of implementing either option.

3.6.2 REBUILD U.S. HIGHWAY 287 EAST OF THE EXISTING ROAD

U.S. Highway 287 south of Townsend could also be constructed on a new location east of its present location. As a starting point for establishing possible new alignments, it was assumed that a departure from the existing alignment would occur near the beginning of the Townsend-South project. Three alignment options were developed in the area east of the existing highway. These options (shown in **FIGURE 4**) are discussed in the following paragraphs.

Option "C" This alignment would depart from the existing alignment at the south edge of Townsend and proceed southeast before turning south to follow Litening Barn Lane. The new alignment would rejoin the existing alignment about 9 km (5.5 miles) south of Townsend. The intent of the alignment is to minimize the departure from the existing alignment but still avoid the concentration of wetlands located between the Montana Ditch and Dry Creek.

Option "D" This alignment would depart from the existing alignment at the south edge of Townsend similar to Option C and proceed southeast before turning south to follow Flynn Lane. The new alignment would rejoin the existing alignment just south of the end of the proposed Townsend-South project.

Option "E" Similar to Options C and D, this alignment would depart from the existing alignment at the south edge of Townsend and proceed southeast to parallel the bench at the east edge of the valley and then turn due south. A long curve would shift the alignment to the southwest providing a long tangent (straight) connection to the existing highway south of the Missouri River bridge at Toston. The new alignment would rejoin the existing alignment about 0.8 km (0.5 miles) south of Toston. This option would require the replacement of the Missouri River bridge at Toston.

Options C, D, and E avoid the concentrated area of wetlands along the existing highway in Townsend-South project area and present several other benefits as compared to alignment options west of the Missouri River. The proposed alignments minimize the required departure from the existing alignment and stay within the project termini of the Townsend-South project. None of the alignment options bypass Townsend.

Options C and D generally follow existing county roads over notable portions of their length and offer opportunities for incorporating existing right-of-way into the new facility.

The concept of rebuilding U.S. Highway 287 on alignments east of the present road within the Townsend-South project area was dropped from consideration for the following reasons:

- The resulting eastern route would be 2.0 to 2.4 km (1.3 to 1.5 miles) longer than the existing route with

construction costs estimated to range between \$2 million to \$10 million higher than the Preferred Alternative.

- Building on a new eastern alignment would require MDT to operate and maintain between 8.9 and 15.3 km (5.5 to 9.5 miles) of the existing route as a Secondary Highway and provide access to adjoining uses.
- While it may be possible to avoid key wetlands adjacent to the existing route in the Townsend-South corridor, rebuilding all or substantial portions of the route on a new eastern alignment requires the development of new highway corridor through areas where such facilities did not previously exist. The resulting environmental effects of such an action could have notable right-of-way impacts, could disrupt agricultural operations, and may require the direct conversion of more important farmland than the Preferred Alternative. Complete avoidance of wetlands would be unlikely since a new eastern alignment would also cross other riparian wetlands.

The issues summarized above represent the major reasons why the concept of reconstructing U.S. Highway 287 on new alignments east of the present roadway was dropped from consideration. Detailed information about Options C, D, and E and summaries of the anticipated environmental effects of implementing these options are presented in **APPENDIX E**.

3.6.3 REBUILD ON THE PRESENT ALIGNMENT

Reconstructing U.S. Highway 287 on exactly the same location within the project corridor is possible but this alignment option was rejected for several important reasons. The Montana Rail Link Railroad lies immediately west of U.S. Highway 287 and parallels the highway through the entire project corridor. Rebuilding the road on an alignment strictly following its existing centerline requires that the construction limits and right-of-way be expanded equally to both sides of the road.

The existing centerline of the highway is located within 48 m (157 feet) of the centerline of the mainline railroad track over the entire length of the corridor. The existing right-of-way easement for the highway is typically about 32 m (105 feet) from the centerline of the mainline railroad track. Contacts with the railroad company indicates that for safety reasons at railroad crossings, the distance from the edge of new highway easements to the centerline of the nearest railroad track must be no closer than 36.6 m (120 feet). Therefore, the existing highway easement is already less than Montana Rail Link's minimum offset distance and rebuilding the road closer to the railroad would compromise safety at railroad crossings. The Preferred Alternative would shift the new road slightly east and would maintain the existing offset distance between the highway easement and centerline of the mainline railroad track.

Another consideration in rejecting this alignment concept was that traffic control during construction would be more difficult and the costs associated with maintaining traffic during reconstruction would be greater than those of the Preferred Alternative. The desired sequencing of work activities could be adversely affected by building the new road on the existing centerline and under traffic. The contractor would be obligated to minimize delays to motorists and considerable amounts of time and effort would have to be devoted to maintaining a passable road surface in the corridor and controlling traffic within work zones. Conflicts would inevitably arise between through traffic, construction personnel, and the operation of construction equipment if the road were rebuilt on the existing centerline.

The Preferred Alternative would shift the alignment to the east shoulder of the present roadway over most of the corridor so traffic can be maintained on the existing road prism during much of the proposed reconstruction.

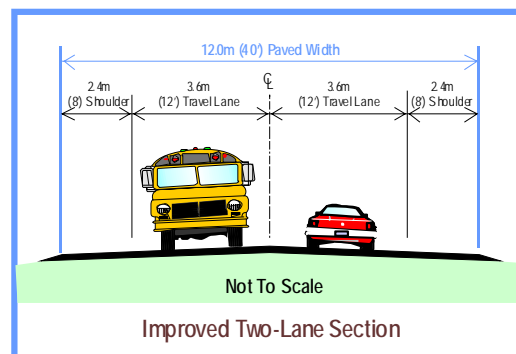
3.7 DESIGN OPTIONS CONSIDERED BUT REJECTED

Other lane configurations (design options) were considered for U.S. Highway 287 in the Townsend-South project area. These options consisted of variations in the highway's cross-section elements and typically refer to the combination of through lanes and turning lanes incorporated into the design for the roadway.

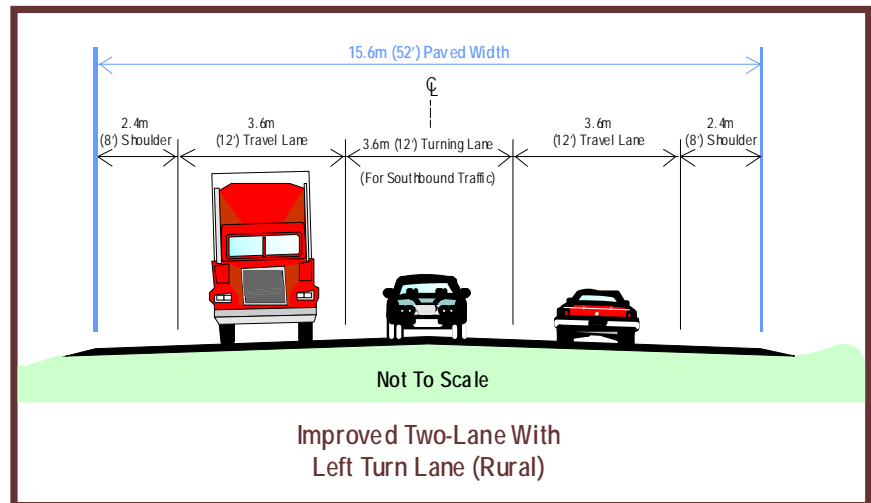
In addition to the Preferred Alternative, preliminary consideration was given to reconstructing the route as a four-lane facility and examined three alternate two-lane design configurations in detail. These design options and the reasons why they were eliminated from consideration are discussed below.

3.7.1 RECONSTRUCTION AS AN IMPROVED TWO-LANE FACILITY

This option would replace the existing two-lane road with a similar but wider two-lane facility. The proposed design would improve the horizontal and/or vertical alignments and reconstruct roadside slopes where needed to meet design standards. Travel lanes would typically be 3.6 m (12 feet) wide and shoulders would be 2.4 m (8 feet) wide as illustrated below.



The addition of a center turning lane on the outskirts of Townsend and at the road's intersections with Lower Deep Creek Road, Shelley Road, and Litening Barn Lane/Dry Creek Road would result in areas with a three-lane typical cross-section as shown below.



The wider paved shoulders associated with this design would not substantially change operating conditions within the corridor. However, capacity analysis shows that passing opportunities and LOS would be reduced over that of the existing facility due to the addition of left turn lanes. MDT's capacity analysis indicates this design would operate at an unacceptable LOS D with a PTSF of 69 percent (as compared to a PTSF of 67 percent for the existing facility) under design year traffic conditions.

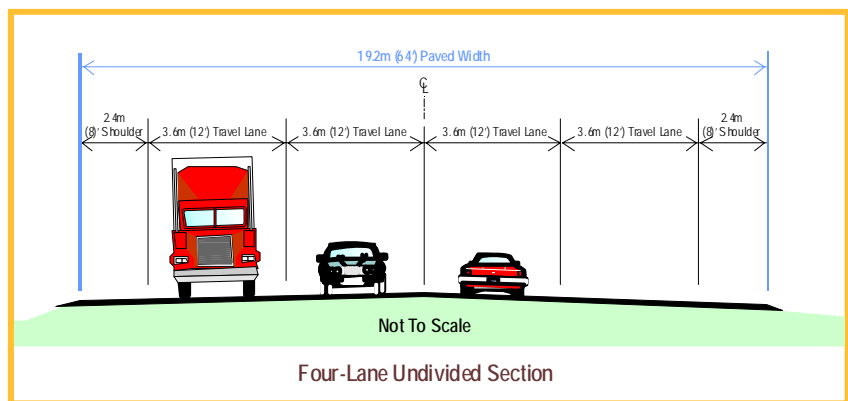
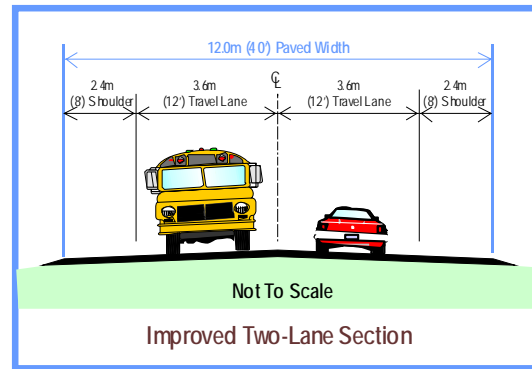
Therefore, this design option would not meet the fundamental purpose and need for this project and was dropped from further consideration.

3.7.2 TWO-LANE RECONSTRUCTION WITH ONE 4-LANE PASSING AREA

This design would provide a two-lane road with one four-lane passing lane segment. This design option was initially proposed in 1998 when the Townsend-South project was reconsidered and activated. The passing lane segment would be at least 1.6 km (1 mile) in length and located near the south end of the project.

A center turn lane would be provided in the area south of the Townsend City limits and left turn lanes would be provided at the intersections of Lower Deep Creek Road, Shelley Road, and Litening Barn Lane/Dry Creek Road. Travel lanes and passing lanes would typically be 3.6 m (12 feet) wide. Turn lanes would be 3.6 m (12 feet) wide except at the north end of the project where the center turn lane would be 4.2 m (14 feet) wide. Shoulders would typically be 2.4 m (8 feet) wide except at the north end of the project where the shoulders would be 0.60 m (2 feet) wide. Since the four-lane passing segment would occur near the south end of the project where no major county road

intersections exist, this design configuration would not include any five-lane roadway. Typical road cross-sections associated with this design configuration are shown below.



Although this option represented MDT's initial design concept for the project, it was dropped from consideration in favor of a design providing three shorter passing areas distributed throughout the Townsend-South corridor. The single 4.8 km (3 miles) passing lane segment in each direction is significantly longer than the optimum length. Research done by the Texas Transportation Institute for the Texas Department of Transportation recommended that passing lanes on two-lane facilities in level terrain with average daily traffic volumes similar to those in the Townsend-South corridor should range from 1.9 to 2.4 km (1.2 to 1.5 miles) in length.

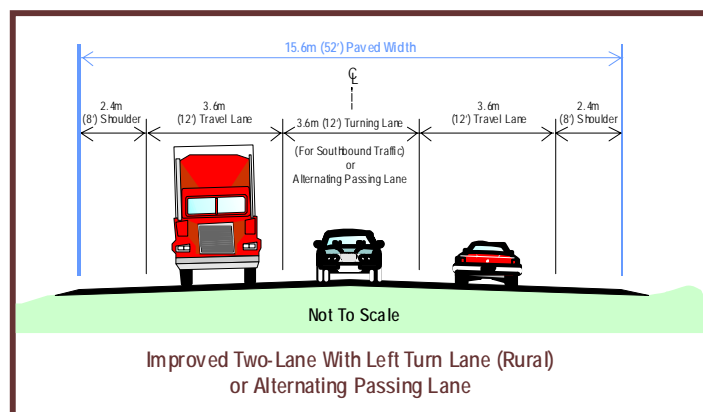
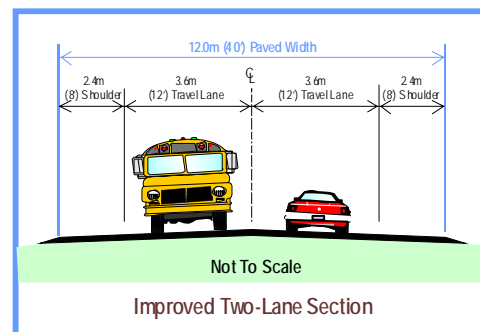
The capacity analysis showed that a single passing lane area would not benefit the level of service on this road section. This is because the operational effects of the passing area (increased passing opportunities) would not be effective over the entire 13.2 km (8.0 mile) project corridor. The capacity analysis indicates that this design option would operate at LOS D with a PTSF of 71 percent in the design year. These forecasted design year operating conditions would be similar to those expected if nothing were done to improve the facility.

For these reasons, this design option was dropped from further consideration in the EA.

3.7.3 TWO-LANE RECONSTRUCTION WITH ALTERNATING PASSING AREAS

Due to fiscal constraints not all highways can be built to four-lane specifications so the need to maximize benefits of two-lane roadways has become increasingly more important. The “Super-2” design configuration is a two-lane roadway with improved operation features. The growing need to maximize benefits of a two-lane roadway through improved capacity, mobility, and safety has led to the development and implementation of Super 2 highways. The Super 2 highway is a two-lane road with enhanced design features which enable the facility to carry higher volumes of traffic at an improved level of safety and service.

The Super 2 concept would include center turn lanes at the Lower Deep Creek Road, Shelley Road, and Litening Barn Lane/Dry Creek Road intersections and 1.6 to 3.2 km (1-2 mile) long, alternating, directional passing lane segments. Two passing lane segments, spaced about 5.6 km (3.5 miles) apart, would be provided within the corridor for both northbound and southbound traffic. The design configuration would provide a three-lanes cross-section over about 70 percent of the project’s length. The addition of a center turn lane at Lower Deep Creek Road and passing lanes would result in sections with a four-lane cross-section in the northern portion of the corridor. Travel lanes would typically be 3.6 m (12 feet) wide and shoulder widths would be a minimum of 1.2 m (4 feet) wide. Center turn lanes would be 3.6 m (12 feet) wide where provided. These typical cross-sections are shown below.



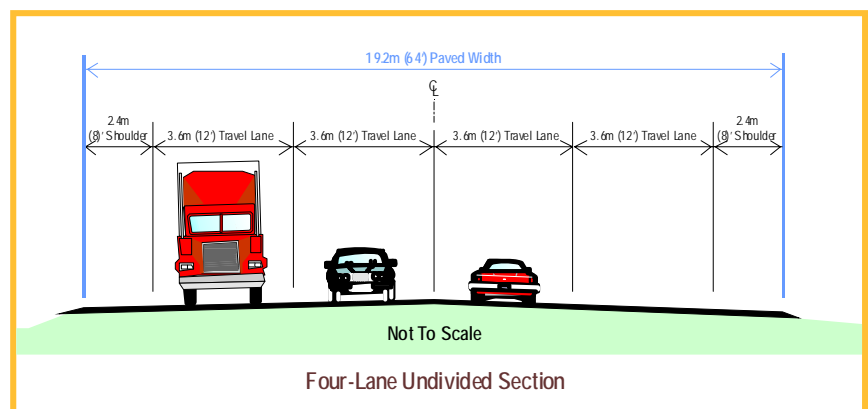
Reconstructing the highway to include alternating directional passing lanes (Super 2 design) is a way to enhance the operation and level of service on this section of U.S. Highway 287. This design option also has the benefit of a narrower overall roadway width than required for other design options incorporating four-lane passing areas.

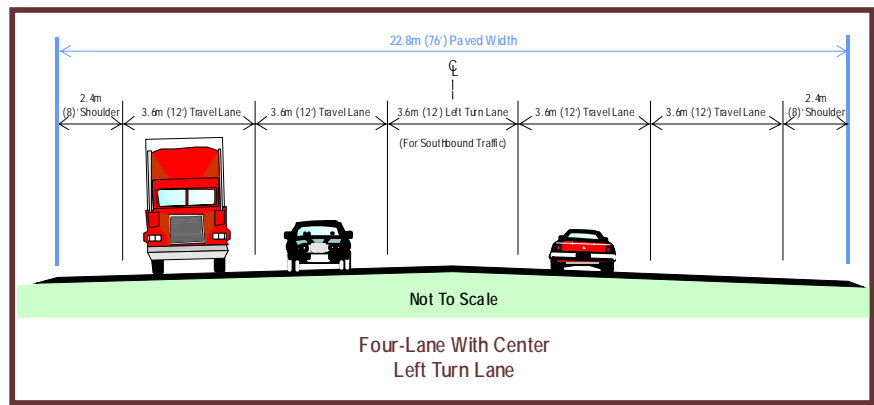
However, the overall passing opportunities in the project corridor would be reduced over present conditions due to the fact that no passing zones would exist for the traffic on the opposite side of the passing zone. The capacity analysis indicates that this design option would operate at LOS C under traffic conditions in the anticipated letting year for the project (2006) and in the design year. This projected LOS falls short of MDT's design year target of LOS B for this facility. As with the design option with one passing area, the alternating directional passing lanes would not provide operational benefits for the entire length of the project.

3.7.4 RECONSTRUCTION AS A 4-LANE FACILITY

This design configuration would provide an undivided four-lane roadway over the length of the Townsend-South project corridor. Travel lanes would typically be 3.6 m (12 feet) wide and shoulder widths would typically be 2.4 m (8 feet) wide. The addition of a 3.6 m (12 feet) wide center turn lane on the outskirts of Townsend and at the road's intersections with Lower Deep Creek Road (RP 79.5), Shelley Road (RP 80.9), and Litening Barn Lane/Dry Creek Road (RP 83.1) would result in areas with a five-lane typical cross-section.

Typical cross-sections for this design option are illustrated below.





Although rebuilding the existing roadway as a four-lane facility over the entire corridor meets the purpose and need for this proposed action, this design option was not selected as the Preferred Alternative. This design option was dropped from consideration because projected traffic volumes over the next twenty years on this portion of U.S. Highway 287 would be unlikely to warrant the provision of a four-lane facility. The associated environmental impacts and costs of rebuilding the existing road as a four-lane facility would notably exceed those of the Preferred Alternative.

Traffic volumes on U.S. Highway 12/287 are highest near East Helena and decrease south of Townsend. The section of U.S. Highway 12/287 between East Helena and Townsend has shown steady increases in traffic in recent years. In response to these increasing traffic demands, operational improvements including the addition of four-lane passing segments have been implemented between East Helena and Townsend. Future four-lane reconstruction on this route, should it occur, would likely begin east of East Helena (where the highest traffic volumes exist) and continue toward Townsend. Expectations are that four-lane reconstruction in the East Helena to Townsend area would not be warranted for at least ten years. A four-lane road south of Townsend could not be justified for at least ten years after such reconstruction occurred north of Townsend.

Further, rebuilding U.S. Highway 287 as a four-lane facility would likely result in more right-of-way acquisition and greater environmental impacts than other design options due to the increased "footprint" of road. The associated cost of construction and right-of-way would be higher than other design options considered for the Townsend-South project.

One of the most notable environmental consequences of rebuilding this route as a four-lane facility would be impacts to roadside wetlands. Four-lane passing areas associated with the Preferred Alternative have been judiciously located to minimize impacts to adjoining wetlands. Due to its wider typical section, constructing a four-lane facility over the full length of the project area would likely result in more wetland impacts than the other designs considered.

3.8 RESULTS OF ALTERNATIVES SCREENING

TABLES 3-3 and **3-4** summarize the results of the screening evaluation for the highway location and design alternatives considered for the proposed Townsend-South project. These tables present side-by-side comparisons of how each location and design alternative considered in this PART addresses the general screening considerations and specific criteria previously established in **TABLES 3-1** and **3-2**.

TABLE 3-3: Screening Evaluation of Townsend-South Location Options

GOALS/PROJECT CONSIDERATIONS	SCREENING CRITERIA	LOCATION OPTIONS				
		No Action	Options A/B Alignments West of the River	Options C/D/E Alignments East of Existing Highway	Strictly Follow the Existing Alignment	Rebuild Near the Existing Alignment (PREFERRED)
Consistency With Pertinent Policy Goals of TranPlan 21	Consistent with pertinent Policy Goals of TranPlan21?	○	+	+	+	+
	• Econ Development Goal A - Preserve the efficient functioning of the transportation system used by Montana's export-oriented industries to access regional, national, and international markets.	■ ■	++	++	++	++
	• Econ Development Goal B - Monitor and address capacity needs arising from Montana's economic growth trends.	○	+	+	+	+
	• Traveler Safety Goal A - Reduce the number and severity of traffic crashes on Montana's roadways.	■ ■	+	+	+	+
	• Access Management Goal A - Improve corridor level access management to preserve the highway system	■ ■	+	+	+	+
	• Bicycle and Pedestrian Transportation Goal B - Target bicycle and pedestrian improvements to account for differences in current and future use. (Improved bicycle and pedestrian facilities through incorporation in existing projects).	■	+	+	+	+
	• Roadway System Performance Goal A - Establish specific priorities for roadway improvements. First priority to preserve Montana's existing system; Second Priority to add capacity and improve mobility.	■ ■	++	++	++	++
Consistency With Applicable Goals of Broadwater County Growth Policy	• Roadway System Performance Goal B- Preserve mobility for people and industry in Montana.	○	+	+	+	+
	Consistent with applicable goals of County Growth Policy?	■ ■	++	++	++	++
	• Transportation Goal 2: Provide an efficient and functional transportation network that will adequately handle present and expected traffic.	○	■	■	○	○
	• Growth and Land Use Goal 2: New development must be designed to minimize the public costs of providing services, and minimize or prevent public health or safety hazards.	○	■ ■	■ ■	○	○
System Impacts	• Growth and Land Use Goal 3: New development must be designed to prevent interfering with, or diminishing the efficiency and management of agricultural operations.	○	■ ■	■	○	○
	• Growth and Land Use Goal 5: Discourage new land development on key, productive agricultural lands that are critical to the vitality of Broadwater County's economy; Encourage new growth to locate near existing communities, where services can be efficiently provided, and the loss of agricultural and forest land is minimized.	○	■ ■	■	○	○
	Would implementation preclude or otherwise affect MDT's future ability to improve U.S. Highway 287 at the Missouri River crossing at Toston?	○	✚ Missouri River crossings not required.	○ (Options C/D) ■ (Option E - Requires new bridge at Toston)	○	○
	Vehicle miles of travel would be significantly changed.	○	■ These options would increase the overall length of U.S. Highway 287.		○	○
	Would reduce travel times on route.	○	■ Travel times would be increased because these alignments are longer than the existing roadway corridor.		○	○
	Would accommodate pedestrian/bicyclist use on route.	○	✚ Yes, wider shoulders would be provided. Conditions for pedestrians and bicyclists would be improved.			
	Would enhance overall safety of route.	○	✚ All build alternatives would meet MDT's Road Design Standards and include features that would enhance safety for the traveling public.			

++ Significantly Positive

■ Negative

○ Neutral/No Change/Minimal Effect

✚ Positive/Yes

■ ■ Significantly Negative

TABLE 3-3: Screening Evaluation of Townsend-South Location Options

GOALS/PROJECT CONSIDERATIONS	SCREENING CRITERIA	LOCATION OPTIONS				
		No Action	Options A/B Alignments West of the River	Options C/D/E Alignments East of Existing Highway	Strictly Follow the Existing Alignment	Rebuild Near the Existing Alignment (PREFERRED)
Feasibility/ Initial Construction Costs/ Affordability	Alternative must have a feasible construction cost.	N/A	■ ■	■ ■ (Options C/D) ■ (Option E)	+	+
	Alternative must be feasible to implement.	+	■ ■	+	+	+
	Range of cost per mile for construction and implementation.	○	■	■ (Options C/D) ■ ■ (Option E)	■	■
	Operating costs over time.	○	■ ■	■	■	■
Maintenance Obligations	Would the alternative require MDT to maintain additional lengths of paved roadway?	○	■ ■	■	○	○
	Result in substantially increased annual maintenance costs?	○	■ ■	■	■	■
Economic and Social	Does the location option bypass Townsend?	○	■ ■	○	○	○
	Would the location option alter the location, distribution, density, or growth rate of the human population in the area?	○	■	■	○	○
	Would the location option alter or interfere with the productivity or profitability of the existing land use in the area?	○	■	■	○	○
	Would the location option result in a need for new facilities or substantial alterations to any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?	○	+	+	○	○
	Would the location option alter the "character" of the community or neighborhood? (Require relocations or substantially disrupt agricultural operations/farmland)	○	■ ■	■ ■	+	+
Impacts to the Natural Environment	Would the alignment result in an overall detracton from the quality of the area's environmental resources such as: a. Wetlands? b. Floodplains? c. Ecological/wildlife habitat? d. Historical and archeological resources? e. Threatened and endangered species? f. Prime or unique farmlands? g. Water quality?	○	■ Entirely new highway corridor required ■ (Habitat, Important Farmland, Wetlands, Floodplains)	■ Major areas of new highway corridor required. ■ (Habitat, Important Farmland, Wetlands Floodplains)	○ ■ ■ (Wetlands) ■ (Habitat, Important Farmland, Floodplains)	○ ■ ■ (Wetlands) ■ (Habitat, Important Farmland, Floodplains)
Access Management	Must provide efficient access to agriculture and rural residences in corridor.	○	+	+	+	+
OVERALL ASSESSMENT		ADVANCED	DROPPED FROM CONSIDERATION	DROPPED FROM CONSIDERATION	DROPPED FROM CONSIDERATION	ADVANCED

++ Substantially Positive

+

Positive

■ Negative

■ ■ Substantially Negative

○ Neutral/No Change/Minimal Effect

TABLE 3-4: Screening Evaluation of Townsend-South Road Design Alternatives

GOALS/DESIGN CONSIDERATIONS	SCREENING CRITERIA	DESIGN ALTERNATIVES					
		No Action	Reconstruct as an Improved Two-Lane	Reconstruct with Alternating Passing Lanes "Super 2"	Reconstruct with One Four-Lane Passing Area	Reconstruct with Three Four-Lane Passing Areas (PREFERRED)	Reconstruct As a Full Four-Lane Road
Consistent with MDT Route Segment Plan?	The design provides at least 40' wide paved road.	■ ■	++	++	++	++	++
	Alternative would provide design features consistent with those of adjoining segments of the route.	○	○	■	○	○	■
	Would implementation of the design preclude or otherwise affect MDT's future ability to improve U.S. Highway 287 south of the Townsend-South corridor.	○	○	○	○	○	○
Eliminate/Reduce Roadway Deficiencies	Design alternative must be consistent with MDT Design Standards for Rural Principal Arterials by:						
	a. Improving the road's horizontal and vertical alignments	○	+	+	+	+	+
	b. Increasing roadway's width	○	++	++	++	++	++
	c. Flattening roadside slopes and providing adequate clear zones.	○	++	++	++	++	++
	d. Improving accommodations for bicyclists and pedestrians.	○	+	+	+	+	+
Replace/Rehabilitate Highway Infrastructure	Improve overall condition of transportation facility and replace outdated features (e.g. bridges).	○/■	++	++	++	++	++
Improve Traffic Operations	Alternative must provide an acceptable Level of Service in the design year. MDT's target level of service for this highway improvement project is LOS B for a period from the opening of the project to the design year.	■ ■ LOS B (Initially) LOS D (Design Year)	■ ■ LOS C (Initially) LOS D (Design Year)	■ ■ LOS C (Initially) LOS C (Design Year)	■ ■ LOS C (Initially) LOS D (Design Year)	■ LOS B (Initially) LOS C (Design Year)	++ LOS A (Initially) LOS A (Design Year)
	Alternative must provide increased passing opportunities within the Townsend-South corridor.	○/■	■	+	+	++	++
	Alternative would provide access management in the corridor	○/■	++	++	++	++	++

++ Substantially Positive

+

Positive

■ Negative

■ ■ Substantially Negative

○ Neutral/No Change/Minimal Effect

N/A Not Applicable

TABLE 3-4: Screening Evaluation of Townsend-South Road Design Alternatives

GOALS/DESIGN CONSIDERATIONS	SCREENING CRITERIA	DESIGN ALTERNATIVES					
		No Action	Reconstruct as an Improved Two-Lane	Reconstruct with Alternating Passing Lanes "Super 2"	Reconstruct with One Four-Lane Passing Area	Reconstruct with Three Four-Lane Passing Areas (PREFERRED)	Reconstruct As a Full Four-Lane Road
Enhance Traffic Safety	Alternative must improve vehicular safety.	○	+	+	+	+	+
	Reduce opportunities for traffic conflicts within the corridor	○	++	++	++	++	++
	Include access management and control	-	++	++	++	++	++
	Reduce number of non-standard features or other physical deficiencies associated with the transportation facility	○	++	++	++	++	++
Effects on the Human Environment	Will the implementation of the design result in notable effects to the land uses, cultural features, and human activities in the project corridor?	○/- (Noise impacts at some locations)	○ - (Noise, right-of-way effects)	○ - (Noise, visual right-of-way effects)	○/- - (Noise, visual right-of-way effects)	- - (Noise, visual right-of-way effects)	- - (Noise, visual right-of-way effects)
Effects on the Natural Environment	Will the implementation of the design notably degrade the quality of the environmental resources in the project area? The following resources were considered: a. Wetlands? b. Floodplains? c. Ecological/wildlife habitat? d. Threatened and endangered species? e. Prime or unique farmlands? f. Water quality?	○	○	-	-	-	-
OVERALL ASSESSMENT		ADVANCED FOR EA ASSESSMENT	DROPPED FROM CONSIDERATION	DROPPED FROM CONSIDERATION	DROPPED FROM CONSIDERATION	ADVANCED FOR EA ASSESSMENT	DROPPED FROM CONSIDERATION

++ Substantially Positive

+

Positive

- Negative

-- Substantially Negative

○ Neutral/No Change/Minimal Effect

N/A Not Applicable

PART 4.0: Affected Environment and Environmental Consequences

PART 4.0: Affected Environment and Environmental Consequences

4.1 INTRODUCTION

This PART of the EA describes the existing conditions or environmental resources in the project area (affected environment) and the anticipated impacts of implementing the Preferred Alternative for the Townsend-South highway reconstruction project. Resources likely to be affected were identified through agency contacts, literature reviews, research and field studies, and public involvement activities. This PART also discusses the potential effects of taking no action to improve U.S. Highway 287. The No Action Alternative does not meet the purpose and need for the project but the impacts of this alternative were analyzed to compare and contrast the anticipated effects of the Preferred Alternative. Where appropriate, measures to mitigate the adverse environmental impacts of this project are discussed at the end of each section. If the Preferred Alternative is advanced, then MDT will implement the mitigating measures identified in this PART.

4.2 IMPACTS TO THE NATURAL ENVIRONMENT

4.2.1 IMPACTS TO LANDFORMS AND SOILS

EXISTING CONDITIONS. The Townsend-South project area lies within the Northern Rocky Mountains Physiographic Province of the United States. The project area consists of generally flat terrain in the bottom of the Missouri River valley. U.S. Highway 287 generally follows the Missouri River from the southern end of Canyon Ferry Reservoir to Toston. The river valley is about 16 km (10 miles) wide in the project area, stretching from the Big Belt Mountains on the east to the Elkhorn Mountains on the west.

Surface elevations in project area range from approximately 1,165 m to 1,200 m (3,820 to 3,940 feet), increasing gradually toward the south end of the project.

Deep Creek, Greyson Creek, and Dry Creek are the main streams draining the Townsend-South project area. These drainages typically flow westward, and are tributaries of the Missouri River. The Townsend-South section of U.S. Highway 287 is adjacent to or generally within 0.8-1.6 km (0.5-1 miles) of the Missouri River over the majority of the corridor's length. The river flows generally northward from its headwaters at the confluence of the Jefferson, Madison and Gallatin Rivers near Three Forks.

IMPACTS OF THE PREFERRED ALTERNATIVE. The proposed road improvements would require cutting and filling adjacent terrain to widen the highway, modify horizontal curves and road grades, and develop portions of road on new areas adjacent to the present highway. These activities would disrupt, displace, compact, and cover soils not currently associated with the existing highway. These effects would be most notable in the wetland areas in the northern portion of the project area and on previously undisturbed lands. Much of the presently traveled way (PTW) would generally be incorporated into the foundation of the new roadway.

The Townsend-South project would require importing additional borrow materials to widen the road and change the road's grade. Surface and subsurface materials would be disturbed at locations away from the project corridor to generate fill material needed to build the new roadway. MDT's contractor(s) would typically provide any needed foundation material for the highway. The environmental effects associated with the highway contractor obtaining and transporting any additional material needed to build the highway cannot be assessed at this time since the origin of such materials is unknown.

No known geotechnical conditions exist that would limit the development of the Townsend-South project. However, soil samples show that some area soils are corrosive to zinc-coated steel and aluminum and some soils are alkali-reactive to concrete. These soil conditions would dictate the types of materials best suited for drainage pipes under the new highway. Where determined necessary, MDT would install culverts made of materials that are resistant to corrosive soils.

Soil testing has shown that the road's subgrade has high moisture levels in some portions of the corridor. The most likely sources of the very high subgrade moisture are high groundwater and lateral seepage from drainage ditches or standing water areas adjoining the road. Reconstruction of the road using methods and materials to stabilize the subgrade would address this condition.

IMPACTS OF THE NO ACTION ALTERNATIVE. The No Action Alternative would not require any significant ground disturbances.

MITIGATING MEASURES. No mitigating measures are necessary or proposed for the proposed project's effects on landforms and area soils.

4.2.2 IMPORTANT FARMLAND

EXISTING CONDITIONS. The *FARMLAND POLICY PROTECTION ACT (FPPA) (7 U.S.C. 4201 et. seq.)* requires special consideration be given to soils that are considered as prime farmland, unique farmland, or farmland of statewide or local importance by the by the U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICES (NRCS). For the purposes of

this EA, these soils are considered together and identified as "Important Farmland."

Based on a review of the Broadwater County Area soil survey (1977) and consultation with the District Conservationist from NRCS Townsend District Office, eight soils considered to be Important Farmland were identified along the U.S. Highway 287 within the Townsend-South project corridor. The following soils (listed by soil symbol and name) were identified by the NRCS as being Important Farmland (**P** - Prime Farmland or **PI** – Prime, if Irrigated):

BsA	Brocko silt loam, 0 to 2 percent slopes (P)
Fa	Fairdale silt loam (PI)
Fb	Fairdale-Lothair silty clays (if irrigated) (PI)
Ha	Havre loam (P)
Lt	Lothair silty clay (P)
MsA	Mussel loam, 0 to 2 percent slopes (P)
Te	Thess silt loam (P)
Vd	Villy silty clay loam, drained (P)

Mapping shows that approximately two-thirds of the land underlying and adjacent to U.S. Highway 287 is comprised of soils meeting these Important Farmland classifications. The existing highway corridor encompasses more than 27.5 ha (64 acres) of soil types considered Prime Farmland or Prime Farmland (If Irrigated).

IMPACTS OF THE PREFERRED ALTERNATIVE. Of importance under the *FPPA* are the areas of direct and indirect conversion of Important Farmland. Direct conversions occur when soils meeting the definition of farmland are included in the proposed highway right-of-way. Indirect conversions of farmland occur when the areas remaining in a tract of land partially taken for right-of-way: 1) would no longer be capable of being farmed due to access restrictions; or (2) would likely be converted to a non-farm use due to the accessibility of the highway.

The information provided by NRCS and preliminary right-of-way plans for the proposed improvements were reviewed to determine the area of Important Farmland that would be affected by the Townsend-South project. Based on the information presented above, about 48 ha (118.6 acres) of soils meeting Important Farmland classifications exist within the proposed right-of-way for the Preferred Alternative. The construction of the proposed project would directly convert about 22 ha, or 54.6 acres, of soils meeting the designation of Important Farmland. The proposed project would not indirectly convert any Important Farmland.

A Farmland Conservation Impact Rating form (#AD-1006) was prepared for the proposed highway improvement project in accordance with the *FPPA*. The form was submitted to the NRCS District Conservationist in Townsend on July 30, 2004 for the completion of Parts II, IV, and V of the form. To date, the form has not been returned. According to 7 CFR 658.4(a), the

proposed project may proceed as if there were no lands subject to the FPPA since the NRCS did not complete its response within 45 days. However, the Preferred Alternative's impacts on Important Farmland were still assessed without information from the NRCS.

MDT's consultant assigned points for the site assessment criteria in Part VI of the form and arrived at a total score of 81. The *Total Points* for the project in Part VII of the form was calculated to be 181 assuming a value of 100 points for Part V. Since this total is less than 260 points, no further consideration for protection is necessary and no additional Important Farmland evaluations are required. The completed form was not submitted to the NRCS but a copy is provided in **APPENDIX B**.

IMPACTS OF THE NO ACTION ALTERNATIVE. The No Action Alternative would not directly or indirectly convert any additional Important Farmland in the Townsend-South corridor.

MITIGATING MEASURES. No mitigating measures are necessary or proposed since the *Total Points* for the project is less than the threshold of 260 points on form #AD-1006.

4.2.3 WATER RESOURCES AND QUALITY

SURFACE WATERS. Major surface water drainages crossed by U.S. Highway 287 in the Townsend-South project area include: Deep Creek, Deep Creek Overflow channel, Greyson Creek, and Dry Creek. These streams pass beneath the highway under bridges or through culverts as they flow towards the Missouri River.

There is also an extensive system of irrigation canals and ditches in the project area including the Montana Ditch, Broadwater-Missouri East Side Canal, and Big Spring Ditch.

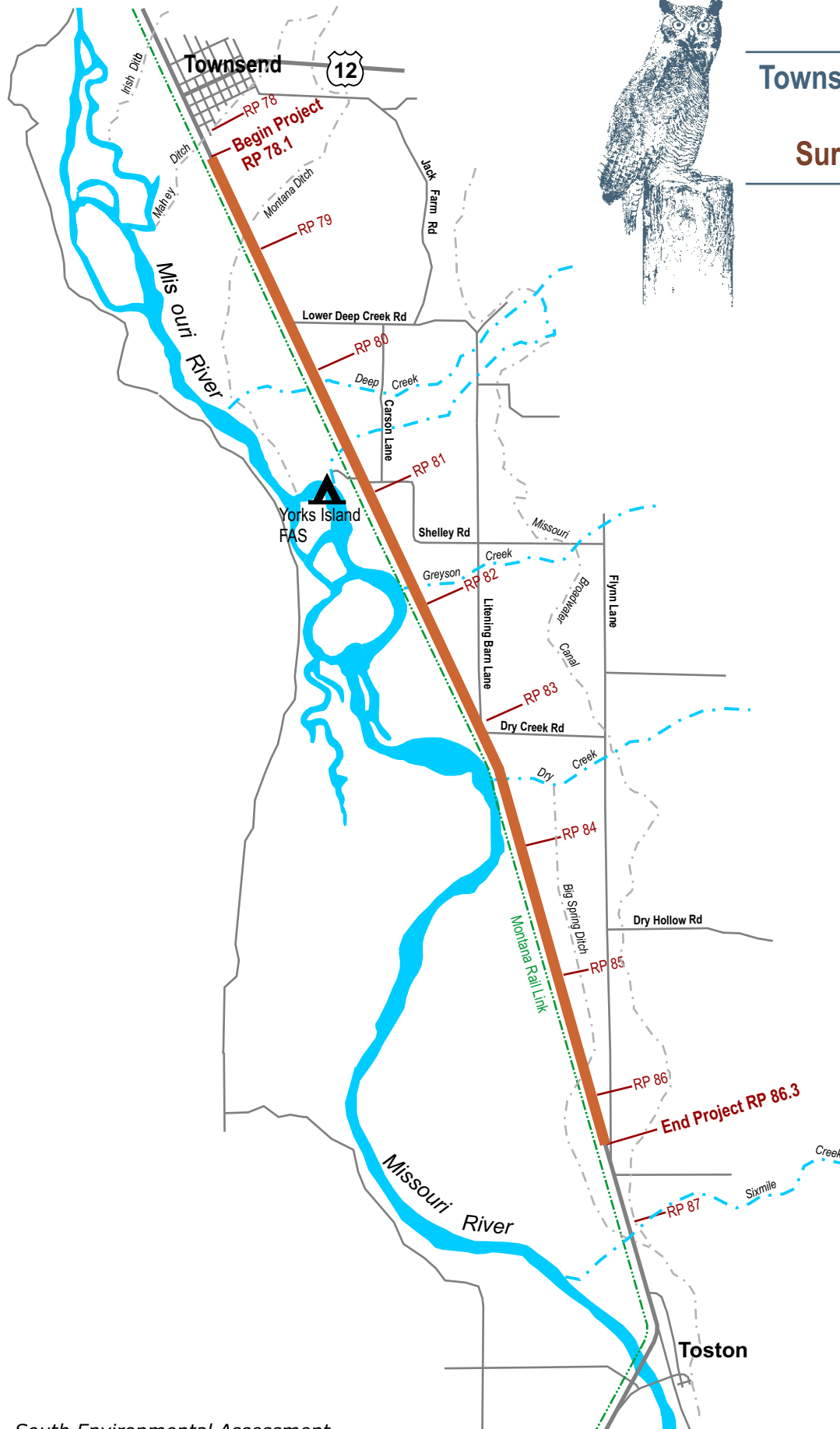
Irrigation features and systems in the project area are managed by the Montana Ditch Company, the Broadwater-Missouri Water Users Association, or privately owned. The Toston Irrigation District distributes water from the Missouri River to agricultural and other users in areas west and south of the Toston community. The Townsend-South corridor has 15 active or abandoned irrigation crossings including a structure across the Montana Ditch, a box culvert, and several siphons and shallow corrugated steel pipes exposed in the right-of-way.

FIGURE 5 shows existing surface waters and major irrigation features along U.S. Highway 287 in the project area.

GROUNDWATER RESOURCES. Groundwater is an important resource in the project area, given its use as a domestic water supply and its function as the primary source of water for the extensive wetlands adjoining portions of the highway corridor. The shallow alluvial aquifer beneath the Missouri River Valley is composed mostly of unconsolidated



Townsend - South Figure 5 Surface Waters



sediments deposited by the river and its tributary streams. In most instances, shallow wells in the aquifer provide adequate water for most domestic and agricultural purposes.

Groundwater information from the MONTANA BUREAU OF MINES AND GEOLOGY was obtained from the Internet (www.nris.state.mt.us) to identify the typical depth of groundwater at water wells drilled in the project area. Data on wells drilled along U.S. Highway 287 since 1900 show well depths range from 6 m (20 feet) to more than 120 m (400 feet) with an average depth of about 10 m (33 feet). Permanently standing water in roadside wetlands, particularly near RP 82.5 north of the intersection of Litening Barn Lane/Dry Creek Road, is indicative of groundwater conditions in some portions of the corridor.

WATER QUALITY. Surface water quality is typically assessed according to the amount and kind of substances present in water, by the water's ability to support beneficial uses such as irrigation and recreation, and by the overall health of the aquatic ecosystem. The health of streams and wetlands (and other surface waters) is assessed based on the constituents dissolved in the water, the condition of the banks and associated riparian zone, and the types and numbers of plants and animals living in the water.

The *MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY* (MDEQ) has the responsibility under *Section 401* of the federal *Clean Water Act* (**33 U.S.C. 1251-1376**) and the *Montana Water Quality Act* (**75-5-101 M.C.A.**, et seq.) to monitor and assess the quality of Montana surface waters and to identify impaired or threatened stream segments and lakes. The MDEQ sets limits, known as Total Maximum Daily Loads (TMDLs), for each pollutant entering a body of water. TMDLs are established for streams or lakes that fail to meet certain standards for water quality and describe the amount of each pollutant a water body can receive without violating water quality standards. The legislatively mandated TMDL process determines the concentration of pollutants in water bodies and stipulates controls needed to improve water quality in order to support designated uses.

The Missouri River (from Toston Dam to Canyon Ferry Reservoir) and Deep Creek (from the National Forest boundary to the Missouri River) are on MDEQ's "2002 Montana 303(d) Impaired Waters" and the "2004 Montana Water Quality Integrated Report" lists. The agency concluded that the beneficial uses of the Missouri's surface water (like aquatic life support, cold water fishery, drinking water supply and industrial) are impaired by metals, flow alteration, riparian degradation, habitat alterations, and siltation caused by agriculture, grazing, and resource extraction activities.

Similarly, Deep Creek's beneficial uses are impaired by flow alterations, habitat alterations, and siltation associated with agriculture, grazing, removal of riparian vegetation, and streambank modifications. MDEQ expects to have TMDLs developed for both water bodies before 2011.

IMPACTS OF THE PREFERRED ALTERNATIVE. The proposed reconstruction of U.S. Highway 287 would directly impact several streams within the project corridor due to the replacement of bridges and culverts at the streams crossed by the roadway. Installing new bridges and culverts within project area streams would result in slight changes to the alignments of existing stream channels at the highway crossings and placement of minor amounts of fill within existing channels. Minor impacts to flows and degradation of water quality could result from work within streams.

Specifically, fill placement and associated work within stream channels would be needed for new bridge or culvert installations at Deep Creek, the Deep Creek Overflow, Greyson Creek, and Dry Creek. Work in or near streams in the project area would require 124SPA permit from the MDFWP. Likewise, the placement of fill material in surface waters or wetlands would require a Section 404 permit by the U.S. ARMY CORPS OF ENGINEERS (COE).

The Preferred Alternative would increase the impervious surface area of the highway. Depending upon the location in the corridor, road widening would add between 3 and 13.7 m (10 and 46 feet) of additional asphalt surfacing for wider shoulders, left turn lanes, and directional passing lanes. The wider paved surface area would decrease infiltration and increase the amount of runoff from the road to adjoining wetlands and drainages crossed by the highway. Water quality could be adversely affected if runoff carrying pollutants from the highway flows directly into wetlands and receiving waters.

Erosion of disturbed areas during construction and surface runoff after construction would be the primary ways that water quality could be indirectly affected by the proposed highway project. Unless preventative measures are taken, runoff carrying sediments from disturbed areas or other pollutants from the roadway corridor have the potential to affect water quality and aquatic resources.

Vegetation clearing and grading for the proposed highway during construction would increase the potential for soil erosion and sediment transport. This potential for erosion and adverse sedimentation impacts would vary depending upon the amount of soil area disturbed, the nature of the soils disturbed, the steepness of slopes, the proximity of the disturbance to wetlands and surface waters, and the duration of the soil disturbance.

Some sediment is normal and expected in any natural stream system, but excess sediment can cause a variety of problems related to water quality. These problems may include alteration of downstream deposition patterns; harming fish habitat by covering the spaces in spawning materials; causing water temperatures and turbidity levels of the water to rise; and increasing the level of nutrients (nitrates and phosphorus) which in turn, may reduce dissolved oxygen levels and impact aquatic food sources and fish growth and health.

Since the total area of soil disturbances for this project would exceed 0.4 ha (1.0 acre), a storm water permit administered by the MDEQ would be required. MDT would develop a Storm Water Pollution Prevention Plan (SWPPP) for this project to meet permit requirements. The SWPPP would be designed specifically for the Townsend-South project and submitted to the MDEQ Permitting and Compliance Division in accordance with their Montana Pollutant Discharge Elimination System (MPDES) Regulations (ARM 16.20.1314).

Best Management Practices (BMPs), including temporary and long-term erosion control measures, would be considered in the design of the SWPPP. Such practices may include the use of straw wattles, lined channels, silt fences, ditch blocks, mulch, slope protection and other commonly accepted control measures. The SWPPP would be developed using procedures and methods established in MDT's *Erosion and Sediment Control Best Management Practices: Reference Manual* whose main objective is to minimize erosion of disturbed areas during and after construction of the proposed project.

Because the SWPPP would be implemented to control erosion and sediment transport during and after the proposed project, the Preferred Alternative would not be expected to cause notable adverse effects on surface water quality in the Townsend-South project area.

Potential water quality impacts can also occur due to highway runoff during the operational life of the road improvement project. The primary constituents in highway runoff include suspended sediments (pavement wear and dirt), lead (gasoline, tire filler), zinc (tire filler, motor oil stabilizers), copper (metal platings, brake linings), and petroleum (gasoline, antifreeze, hydraulic fluids). De-icing and sanding practices, for example, may leave concentrations of chloride, sodium, and calcium on the roadway surface. These pollutants can be introduced into surface waters by snow plowing and snow melting. Rural roadways with gravel shoulders and vegetated ditches tend to slow runoff through soil absorption.

During the mid-1980s, the FHWA conducted extensive nationwide studies to determine highway runoff constituents, amounts relative to roadway types and traffic conditions, and the potential impacts to surface water resources (*Pollutant Loadings and Impacts from Highway Stormwater Runoff, Volume I*, FHWA, April 1990). FHWA's research concluded that pollutants in highway runoff are not present in amounts sufficient to threaten surface or groundwater where ADT volumes are below 30,000. Since traffic volumes in the Townsend-South corridor are projected to be less than 7,300 vehicles per day by the design year (2026), it can be concluded that runoff from the highway would not cause significant degradation of surface or groundwater in the project area.

The proposed project would affect irrigation features and require work within irrigation canals crossed by the highway. In the

recent Headwaters, Inc. v. Talent Irrigation District case, the U.S. Court of Appeals for the Ninth Circuit ruled that irrigation canals that receive water from natural streams and lakes, and that divert water to streams and creeks, are connected as "tributaries" to those other waters. As tributaries, the canals are jurisdictional "Waters of the United States" and subject to the *Clean Water Act* and the COE's 404 permitting requirements. Based on this decision, some of the irrigation canals crossed by the highway may require a 404 permit prior to the installation of new culverts and the realignment of irrigation canals.

Groundwater hydrology in the project area would be unaffected by the proposed highway improvements since excavation to or below the depth of groundwater would be unnecessary. The proposed project would have no direct adverse impacts to public or private drinking water supplies derived from groundwater sources.

IMPACTS OF THE NO ACTION ALTERNATIVE. The No Action Alternative would not construct roadway improvements so no project-related impacts to the Missouri River and its tributary streams in the project area would result. Minor amounts of sediments and other pollutants associated with sanding and deicing would continue to be introduced to surface waters in the project area by snow plowing and runoff from snow melting.

MITIGATING MEASURES. The following measures will be implemented to minimize water quality impacts in the Townsend-South project area.

- *A Storm Water Pollution Prevention Plan (SWPPP) employing Best Management Practices for controlling erosion and sediment transport will be implemented in the project area.*
- *Work in streams, wetlands, and irrigation ditches subject to the recent Headwaters, Inc. v. Talent Irrigation District decision will be performed in accordance with the conditions of water-related permits from the MDEQ, MDFWP, and/or the COE.*
- *Development of a revegetation plan, erosion control measures, and storm water pollution prevention plan will be coordinated with appropriate permitting and resources agencies.*

4.2.4 FLOODPLAINS

DELINEATED FLOODPLAINS. Executive Order No. 11988 and FHWA's floodplain regulations (23 CFR 650, Subpart A) require that the proposed action be evaluated to determine the effects of any encroachments on the "base" floodplain. The base floodplain is the area covered by water from the 100-year flood.

The 100-year flood represents a flood event that has a 1 percent chance of being equaled or exceeded in any given year. The Executive Order requires that federal agencies, in carrying out their proposed projects, provide leadership and take action to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains.

FIGURE 6 shows delineated floodplains in the for the project area. The floodplain mapping is based on Flood Hazard Boundary Maps (FHBMs) for Broadwater County prepared by the FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) in 1982. The FEMA maps show areas at risk from major flood events. FHBMs panels #300145 9B and 300145 12B (effective 12/01/1986) show delineated floodplains of the Missouri River and its tributaries. As **FIGURE 6** shows, U.S. Highway 287 crosses delineated floodplains at Deep Creek, at the confluence of Greyson Creek and the Missouri River, and along the Missouri River south of Litening Barn/Dry Creek Roads.

IMPACTS OF THE PREFERRED ALTERNATIVE. This proposed project would result in transverse encroachments on delineated floodplains at Deep Creek and Greyson Creek and a longitudinal encroachment on the delineated floodplain of the Missouri River between RP 83 and RP 84.

The Preferred Alternative would replace existing drainage features at or near their present locations to ensure that floodwater is accommodated and managed without major changes that could adversely impact nearby residents and uses. Where feasible, the proposed project would attempt to enhance existing drainage conditions.

The Preferred Alternative would place fill and require work within the stream channel for the installation of new bridges or culverts at Deep and Greyson Creek and within the delineated floodplain of Missouri River. However, the new drainage structures would be sized to handle the anticipated flood flows without interruption to public transportation due to flood damage to the roadway.

These encroachments would not substantially increase 100-year flood elevations. Consistent with the requirements of Executive Order No. 11988, the proposed project would not be expected to promote or encourage development within the floodplain or increase flood liability hazards.

Broadwater County has adopted Floodplain Development Regulations for activities within delineated floodplains for the FEMA. A floodplain permit from the Broadwater County Floodplain Administrator will be required prior to construction of the project, as the new roadway will result in further transverse encroachment on the delineated floodplain.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would have no new effects to floodplains in the

project area. There are no risks of new flooding incurred, no impacts on natural and beneficial floodplain values, and no likelihood of incompatible floodplain development.

MITIGATION MEASURES. The following measures will be implemented to minimize any floodplain concerns associated with MDT's proposed reconstruction of U.S. Highway 287 in the Townsend-South project area.

- *MDT will obtain a Floodplain Development Permit from the Broadwater County Floodplain Administrator for construction activities within the delineated floodplains of the Missouri River or its tributaries.*

4.2.5 AIR QUALITY IMPACTS

EXISTING CONDITIONS. Air quality within the Townsend-South project area can be described as good. Sources of air pollution in the area include vehicle emissions, dust generated by traffic on unpaved roads in the area, agricultural activities and from occasional outside burning. No violations of state or federal air quality standards are known.

The proposed action is located in an unclassifiable/ attainment area of Montana for air quality under 40 CFR 81.327, as amended. As such, this proposed project is not covered under the U.S. Environmental Protection Agency's Final Rule of September 15, 1997 on Air Quality Conformity. Therefore, this proposed action complies with Section 176(c) of the Clean Air Act, as amended (**42 U.S.C. 7521(a)**).

IMPACTS OF THE PREFERRED ALTERNATIVE. The Preferred Action would result in short-term air quality impacts during construction of the proposed project due to the disturbance of relatively large areas and operation of heavy equipment in work zones. These impacts would be minor and limited to the construction period. Slight reductions in the amount of vehicle emissions could occur due to the provision of a more efficient highway facility. Traffic volume increases in the future on this route will result in increased vehicle emissions over present conditions. However, emissions will not increase to a level approaching established standards for air quality.

IMPACTS OF THE NO ACTION ALTERNATIVE. A minimal increase in vehicle-generated air pollutants could occur if traffic volumes on the route increase to a level where average vehicle speeds notably decrease. As with the Preferred Action, traffic volume increases in the future will increase pollutant levels --but not to levels of concern.

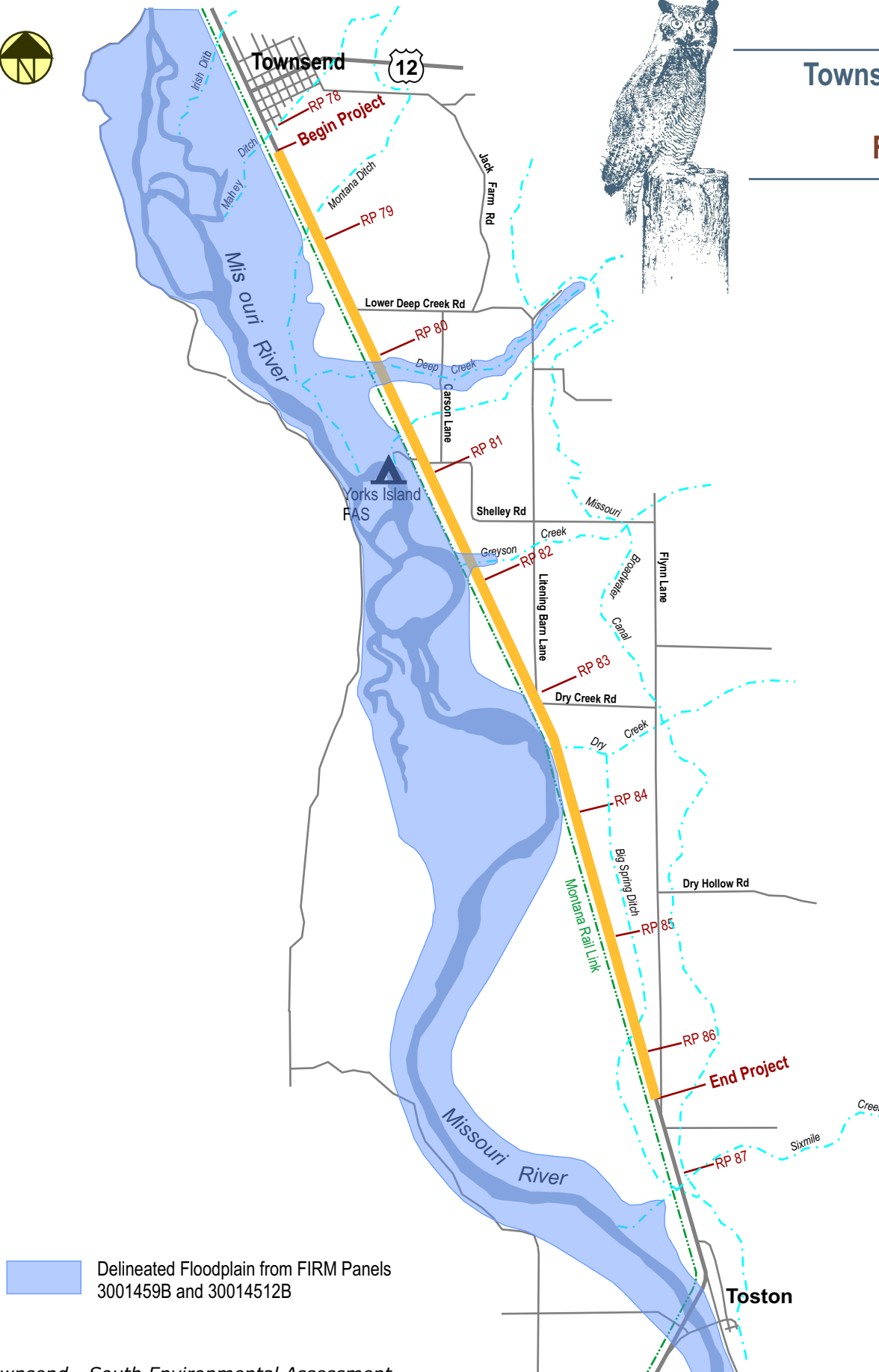
MITIGATING MEASURES. The following measures will be implemented to minimize any air quality impacts associated with the construction of this project.

- *MDT's Standard Specifications for Road and Bridge*



Townsend - South

Figure 6 Flood Plains



Construction will be implemented for this project. This document includes guidelines for construction operations to help minimize adverse effects on air quality.

- *Contractors will be required to obtain permits from the MDEQ Air Quality Bureau for activities like gravel crushing and the production of asphalt.*
- *MDT's contractor will incorporate all necessary dust control measures into the plans for the proposed project.*

4.2.6 VEGETATION

EXISTING CONDITIONS. The proposed alignment traverses intermountain valley grassland and meadow, much of which has been converted to pasture, crop and hay land. Common grass species observed within and adjacent to the highway corridor include wheatgrasses, quackgrass, brome, Kentucky bluegrass, cheatgrass, and great basin wild rye.

Grasses in the project area are often interspersed with other common species including yellow and white sweetclover, kochia, American licorice, showy milkweed, curly-cup gumweed, scattered alfalfa, Canada thistle, field bindweed, broadleaf plantain, and dandelion.

Scattered shrubs interspersed with grasslands include golden current, snowberry, wild rose, chokecherry, and several willow species. Tree species scattered throughout the project area and common along the Missouri River bottom include narrowleaf cottonwood, poplar, and Russian olive.

Typical species found in wetlands is discussed later in this PART.

RARE OR SENSITIVE PLANTS. A search of the MONTANA NATURAL HERITAGE PROGRAM (MNHP) database revealed two known sensitive plant locations adjacent to the proposed project (MNHP 2000). Annual Indian paintbrush (*Castilleja exilis*) and Mealy primrose (*Primula incana*) both occur in areas near the existing highway. A population of Indian paintbrush was found west of the existing highway near the Montana Ditch (RP 79). Populations of Indian paintbrush and Mealy primrose also exist east of U.S. Highway 287 in the vicinity the York's Islands Fishing Access Site.

Ute ladies' tresses, a federally-listed threatened plant, also occurs within the project corridor. The potential effects of highway reconstruction on this listed plant species and its habitat are discussed later in this Part.

INVASIVE/NOXIOUS PLANTS. Executive Order 13112, *Invasive Species*, signed on February 3, 1999, addresses federal agency responsibilities with respect to invasive species (noxious weeds). As a partially federally funded action, the project is subject to the provisions of the Executive Order. According to

the Invaders Database System (2004), twelve of the noxious weeds listed for Montana have been identified in Broadwater County. These include common tansy, hoary cress, diffuse knapweed, spotted knapweed, Russian knapweed, Canada thistle, field bindweed, houndstongue, leafy spurge, yellow toadflax, dalmation toadflax, and St. Johnswort.

Canada thistle is common along the highway for much of the project length, particularly in association with seasonally moist areas and disturbed pasture land and roadside ditches. Field bindweed also commonly occurs immediately adjacent to the roadway and pasture land and roadside ditches. Field bindweed also commonly occurs immediately adjacent to the roadway and in pasture traversed by the existing highway alignment. Both species are Category 1 noxious weeds as defined by the State of Montana. The MONTANA DEPARTMENT OF AGRICULTURE defines Category 1 noxious weeds as "weeds that are currently established and generally widespread in many counties of the state." These weeds are capable of rapid spread and render land unfit or greatly limit beneficial uses.

Other less common Category 1 noxious weeds identified in the project corridor include spotted knapweed, diffuse knapweed, and houndstongue.

IMPACTS OF THE PREFERRED ALTERNATIVE. The proposed highway improvements would result in the permanent loss of vegetation where roadway alignment revisions and widening occur. Temporary disturbances would occur where vegetation is cleared from the right-of-way, at staging areas for construction equipment and at any necessary borrow sites.

Within the project area, the extent of vegetation lost would be greatest to the east side of the existing highway since the alignment of the road would be shifted slightly in that direction.

Minor amounts of cropland, hay land and grazing land would be impacted in upland areas, and some riparian and wetland vegetation would be lost due to the proposed road reconstruction.

Upland areas immediately adjacent to the existing highway are currently subjected to other types of human disturbance including railroad, residential, commercial, and agricultural (farming, grazing) activities. Consequently, upland vegetation communities affected by the project are generally judged to be of moderate to relatively low overall quality. As such, direct impacts to existing upland vegetation in the project area resulting from the proposed highway reconstruction are considered relatively minor.

Wetlands and riparian areas support some of the most important vegetation and habitat types in the project area. Many wildlife species associate at times with wetland and riparian habitats due to the diverse vegetation and sources of water often found in these areas. Additionally, many species use riparian areas as

movement corridors. Permanent and temporary impacts to riparian and wetland habitat are expected with this project and would occur as a result of alignment shifts and widening of the roadway.

The Townsend-South project has been designed to avoid impacts to a known population of Indian paintbrush in the project area. The mapped location of these plants were considered in MDT's preliminary design, and known locations for Indian paintbrush would be outside the project's required construction limits. However, because suitable habitat for this sensitive plant species occurs east of the road – impacting habitat for Indian paintbrush is unavoidable.

Construction would disturb existing noxious weed communities and would create opportunities for noxious weed establishment within newly disturbed areas. Exposed soils, particularly adjacent to roadways, are extremely vulnerable to weed establishment. Offsite movement from roadway corridors onto adjacent land can result in reduced land values and productivity through a reduction in vegetative diversity and occurrence of native plants.

Implementation of weed control measures prior to and during construction would reduce the potential severity of this impact.

Measures to control weeds include: spraying weeds prior to initial disturbance; use of weed-free soils and other materials, including certified weed-free seed for reclamation; and maintaining weed control along the project for an adequate period of time following construction.

In accordance with Executive Order No. 13112, MDT would implement measures to help prevent the introduction of invasive species into the Townsend-South project area. These measures would include coordinating the project with the Broadwater County Weed Control District, promptly reseeding disturbed areas with desirable vegetation, and requiring MDT's contractors to follow procedures to prevent the spread of noxious weeds.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would cause no further impacts on vegetation within the Townsend-South project area.

MITIGATION MEASURES. The following measures will be implemented to minimize vegetation impacts and reduce the potential for the spread of noxious weeds in the project area.

- *Clearing and grubbing operations will be restricted to the minimum area necessary to accommodate the planned reconstruction activities and improvements.*
- *Areas disturbed within the MDT Right-of-Way or construction easements will be reseeded as quickly as practicable after construction.*

- *A revegetation plan will be developed for this project to be followed by the contractor. The plan will include specifications on seeding methods, seeding dates, types and amounts of mulch and fertilizer, and seed mix components. The plan will also be submitted to the Broadwater County Weed Control District for review.*
- *The Contractor must also follow the requirements of the County Noxious Weed Management Act and all county and contract noxious weed control provisions.*
- *Construction equipment must be cleaned prior to entering the project area to avoid the unintentional introduction of noxious weed seed from other sites.*
- *Mulch used for revegetation will be certified as weed-free.*

4.2.7 WETLANDS

EXISTING CONDITIONS. Land & Water Consulting, Inc. delineated wetlands in the project area according to criteria and methods outlined in the U.S. ARMY CORPS OF ENGINEERS (COE) *1987 Wetlands Delineation Manual* (Environmental Laboratory, 1987). The manual provides guidance for determining the presence of jurisdictional wetlands based on observations of vegetation, soils, and hydrology. Wetland location maps, found plant species lists, and COE Routine Wetland Determination forms were prepared for wetland sites identified within the corridor. Additionally, MDT Field Evaluation forms were completed to assess the many functions and values attributable to wetlands. These materials are included in the Biological Resources Report prepared for MDT.

Delineated Wetland Sites. Thirteen wetland sites (comprised of twenty-six smaller subsites) were delineated in the project corridor. These sites are listed in **TABLE 4-1** and their general locations are shown in **FIGURE 7**. **TABLE 4-1** also presents the approximate locations, dominant wetland class, overall wetland ratings using MDT's Montana Wetland Assessment Method, approximate impact area, source of wetland hydrology, and a brief narrative description for each wetland delineated along the Townsend-South project corridor.

Wetland Types. Wetlands along the proposed project generally fall into one of three categories including: 1) seasonally to permanently inundated emergent wetlands on both sides of the roadway, 2) emergent wet meadow wetlands east of the highway, and 3) fringe wetlands along the natural drainages and irrigation canals that cross the highway. Representative photos of project area wetlands are shown in **PHOTO PLATES 5 and 6**.

Wetlands included in first category are typically associated with roadside borrow areas between the highway and railroad, and also to a lesser extent, on the east side of the roadway. These are the most prominent wetlands within the project corridor. Also included in this category are historic Missouri River

Table 4-1: Townsend-South Wetlands and Estimated Impacts

Site	Approximate Location by (RP)	Vegetated Cowardin Classes ^{1,2}	MDT Wetland Rating Category	Source of Wetland Hydrology	Estimated Impact Ha/(Acres)	Description of Wetland Site
1A	RP 78.7 to RP 78.9	EM	III	Groundwater	0.1/ (0.2)	Wet meadow pasture
1B	RP 78.7 to RP 78.9	EM	III	Groundwater	0.1/ (0.3)	Wet meadow pasture
1C	RP 78.7 to RP 78.9	EM/SS	III	Groundwater	0.1/ (0.2)	Roadside borrow area
2	RP 78.9	EM/SS/UB	III	Montana Ditch	0.0/ (0.0)*	Irrigation ditch
3A	RP 78.9 to RP 79.4	EM	III	Groundwater	1.2/ (2.9)	Wet meadow pasture
3B	RP 78.9 to RP 79.4	EM	III	Groundwater	0.1/ (0.2)	Wet meadow pasture
3C	RP 78.9 to RP 79.4	EM	II	Groundwater	0.2/ (0.6)	Roadside borrow area
4	RP 80.1	EM/SS/UB	III	Deep Creek Groundwater	0.1/ (0.2)	Deep Creek
5	RP 80.6	EM/SS	III	Deep Creek Groundwater	0.0/ (0.0)*	Deep Creek Overflow
6A	RP 80.9 to RP 81.4	EM/SS/AB	III	Groundwater	0.4/ (0.9)	Roadside borrow area
6B	RP 80.9 to RP 81.4	EM/SS	I	Groundwater	0.1/ (0.2)	Roadside borrow area
6C	RP 80.9 to RP 81.4	EM/AB	III	Groundwater	0.7/ (1.6)	Historic channel
6D	RP 81.4	EM/SS	III	Groundwater	Combined with 6C	Wet meadow pasture
7A	RP 81.4	EM/SS	I	Groundwater	0.0/ (0.1)*	Roadside borrow area
7B	RP 81.4	EM/AB	III	Groundwater	0.1/ (0.2)	Historic channel
8A	RP 81.9 to RP 82.8	EM	III	Groundwater	0.0/ (0.0)	Roadside borrow area
8B	RP 81.9 to RP 82.8	EM/SS/AB	III	Groundwater	2.1/ (5.1)	Marsh/Roadside borrow area
8C	RP 81.9 to RP 82.8	EM/SS/AB	III	Groundwater	0.1/ (0.3)	Marsh -- Roadside borrow area
8D	RP 81.9 to RP 82.8	EM	III	Groundwater	0.0/ (0.0)	Roadside borrow area
8E	RP 81.9 to RP 82.8	EM	III	Groundwater	0.0/ (0.0)	Roadside borrow area
9	RP 81.9	EM/SS/UB	III	Greyson Creek	0.0/ (0.0)*	Greyson Creek
10	RP 83.4	EM/UB	III	Dry Creek Groundwater	0.0/ (0.0)*	Dry Creek
11	RP 83.6	EM	III	Groundwater	0.0/ (0.0)	Roadside borrow area
12	RP 85.6	EM/FO/UB	III	Groundwater	0.0/ (0.0)*	Ditch
13A	RP 85.8	EM/UB	III	Big Spring Ditch Groundwater	0.0/ (0.1)*	Big Spring Ditch
13B	RP 85.9	EM	III	Groundwater	0.3/ (0.6)	Roadside borrow area
				TOTAL	5.6/(13.9)	

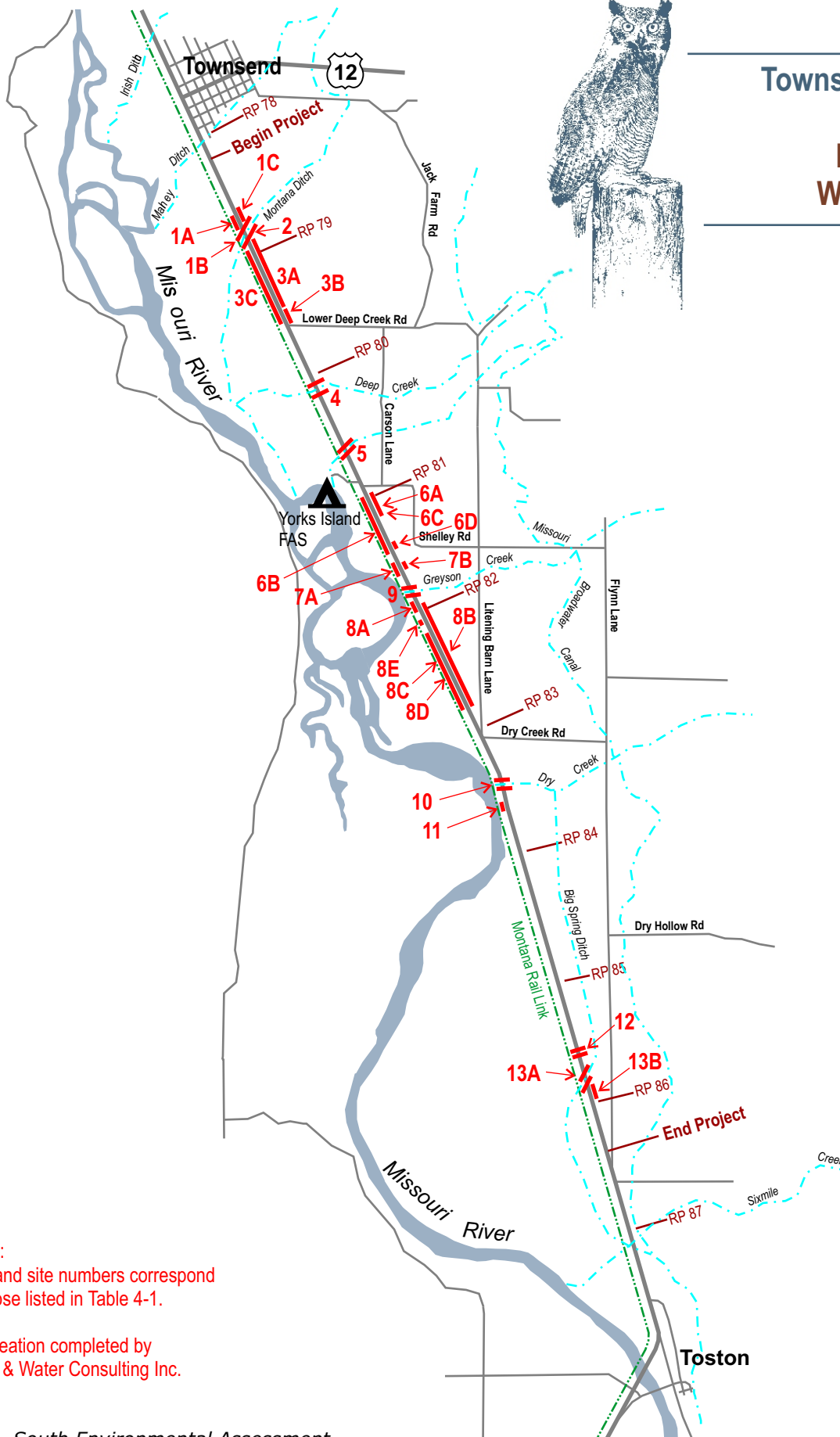
1 EM = Emergent Marsh; SS = Scrub/Shrub; UB = Unconsolidated Bottom; AB = Aquatic Bed

2 Cowardin et. al. 1979

* Note that minor wetland impacts would occur at these sites; however, rounding to one decimal place resulted in impact areas of 0.0 ha or 0.0 acres.



Townsend - South Figure 7 Project Area Wetland Sites



NOTES:

1. Wetland site numbers correspond to those listed in Table 4-1.

2. Delineation completed by Land & Water Consulting Inc.

Photo Plate 5: Representative Wetlands Townsend-South Project Corridor

Photograph 1:

Roadside wetlands with emergent marsh habitat exists at numerous locations throughout the corridor.



Photograph 2:

Emergent wet meadow pastures are common in the northern portion of the project corridor. These wetlands are characterized by a high groundwater table and exhibit extensive hummocks.



Photo Plate 6: Representative Wetlands Townsend-South Project Corridor

Photographs 1/2:

Typical roadside wetlands found between RP 82 and RP 83. These wetlands, associated with roadside borrow areas are seasonally to permanently inundated by groundwater and comprised of emergent marsh, open water and aquatic bed habitat.



channels bisected by the roadway. These wetlands are seasonally to permanently inundated from groundwater and comprised mainly of emergent wetland habitat, with some scrub/shrub wetland, open water and aquatic bed habitat. Common emergent wetland species include: broad-leaf cattail, reed canarygrass, meadow foxtail, creeping spikerush, a variety of sedges and bulrush, American sloughgrass, Baltic rush, Alkali cordgrass, foxtail barley, field horsetail, field mint, redtop, tall manna grass, and common reed. Common woody species found within scrub/shrub wetlands include sandbar willow, bebb willow, yellow willow, and cottonwood.

Wetlands in the second category are comprised primarily of the expansive wet meadow pastures east of the highway near the north end of the project corridor. These wetlands benefit from a seasonally high groundwater table and exhibit hummocks throughout. Common wetland plant species include: redtop, meadow foxtail, foxtail barley, Baltic rush, and silverweed. Wet meadow pastures in the project corridor are moderately to heavily grazed.

The last wetland category is comprised of fringe wetlands adjacent to the irrigation ditches and streams in the project corridor. Deep, Greyson, and Dry Creeks have perennial flows, except during extreme drought conditions and/or when irrigation diversion results in de-watering of the channel. The irrigation facilities flow water from approximately April through September. Though each site has distinct characteristics, fringe wetlands at these sites are generally comprised of emergent marsh and scrub/shrub habitat. Common plant species include reed canary grass, mint, redtop, horsetail, creeping spikerush, sandbar willow, bebb willow, and cottonwood.

Wetland Functions. Wetland functions at delineated sites were evaluated according to the 1999 MDT Montana Wetland Assessment Method. Based on this method, Category I is the highest overall ranking a wetland can receive, followed by Category II, Category III, and Category IV.

The majority of the delineated wetlands in the project corridor were rated Category III. However, two wetland sites (Sites 6B and 7A) rated as Category I and one site (Site 3C) rated as Category II. Wetland Sites 6B and 7A were rated as Category I due to the presence of Ute ladies' tresses. Generally, large wet meadow pastures in the area rated the lowest because of the high disturbance associated with grazing and due to the lack of wetland diversity. Prominent functions at most corridor wetland sites include: Short and Long Term Surface Water Storage, Sediment, Nutrient, Toxicant Removal, Production Export/Food Chain Support, and Groundwater Discharge/ Recharge. Several of the large emergent marsh wetlands adjacent to the highway also provide important habitat for waterfowl, song birds, shore birds, amphibians and reptiles, deer, and small mammals.

Jurisdictional Status of Corridor Wetlands. The "jurisdictional" status of affected wetlands in the area is an

important consideration for this proposed project because of MDT's mitigation requirements. Jurisdictional wetlands are those that fall under the COE jurisdiction with respect to *Section 404* of the *Clean Water Act*. According to 33 CFR 328.4 (c), the limits of jurisdiction in non-tidal waters are as follows:

- In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
- When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
- When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

As indicated previously, irrigation canals that receive water from natural streams and that divert water to streams and creeks, are considered tributaries of the associated streams. As tributaries, the canals are jurisdictional "Waters of the United States."

Based upon recent published guidance, all of the wetland sites bisected by this project would be considered jurisdictional because they are directly connected or adjacent to a Water of the United States. It should be noted, however, that jurisdiction will ultimately be decided by the COE for each delineated wetland site.

IMPACTS OF THE PREFERRED ALTERNATIVE.

Reconstructing U.S. Highway 287 would result in unavoidable encroachments into some wetlands in the project area due to the proposed road realignment and widening and required crossings of area streams and irrigation canals. Wetland vegetation would be removed and hydric soils would be covered with the roadbed and fill slopes in impacted areas. A preliminary design for the proposed highway improvements project has been developed to minimize encroachment into wetlands. However, wetlands are extensive and found on both sides of the existing highway throughout the project corridor, making it difficult to construct the new road without encroachments into wetlands.

The proposed project would result in direct impacts to 22 of the 26 delineated wetland sites in the corridor and the loss of about 5.6 ha (13.9 acres) of wetland. The impacts would primarily be the result of fill placement in wetland sites. The proposed project would impact 5.3 ha (13.0 acres) of Category III wetlands, 0.2 ha (0.6 acres) of Category II wetlands, and 0.1ha (0.3 acres) of Category I wetlands. All of wetland sites impacted by the proposed project are likely to be jurisdictional under the *Clean Water Act*.

The largest individual impact (2.1 ha - 5.1 acres) along the project would occur at Wetland 8B. The most notable loss of wetland functions would occur at Wetland 8C. Both sites occur between RP 81.9 to RP 82.8 in the corridor.

Minor, temporary impacts within the right-of-way and temporary construction easements may also occur, although these impacts cannot be quantified because detailed design plans do not yet exist and precise construction techniques/approaches are unknown at this time. Temporary impacts to wetlands within the right-of-way construction easement areas would be restored to original contours and revegetated immediately following construction.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would cause no further impacts to wetlands within the project area.

MITIGATION MEASURES. The *1990 Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines* requires that wetland mitigation be addressed in the following sequence:

- (1) Avoid potential impacts to the maximum extent practicable.
- (2) Minimize unavoidable impacts to the extent appropriate and practicable.
- (3) Compensate for unavoidable adverse impacts that remain after all appropriate and practicable minimization has been required.

Avoidance and Minimization. Impacts were avoided and minimized to the extent practicable by keeping the proposed alignment adjacent to the existing alignment and slightly shifting the alignment of the roadway in critical wetland areas. To the extent practicable, the three passing lane sections have been placed to limit wetland impacts. Further avoidance and minimization measures will be examined as the design of the roadway proceeds. The majority of impacts would occur at sites immediately adjacent to the road, often on both sides, and are largely unavoidable regardless of whether the centerline is shifted to the east or west of the existing highway.

Compensation. Compensatory mitigation for the projected 5.6 ha (13.9 acre) wetland loss is being pursued under the 1996 MDT Interagency Wetland Group operating procedures.

Because the design is only in the preliminary stages, it is not readily apparent yet whether there are any viable opportunities for on-site mitigation along the old alignment. In general, much of the area occupied by the old road would be incorporated into the new facility and construction limits on the west side of the road would remain within the existing right-of-way.

Since the early 1990s, numerous on and off-site opportunities have been evaluated by MDT (including more than 30 sites reviewed by a consultant) with no success in finding a suitable

mitigation site or sites. However, substantial progress has recently been made towards identifying wetland sites that may help mitigate the anticipated wetland losses associated with this project and several other reconstruction projects in MDT's Butte District.

MDT is actively pursuing wetland mitigation opportunities in the watershed including a stream restoration project on Woodson Creek near Ringling in Meagher County. The Woodson Creek Wetland Mitigation Project would restore meanders to a 2.4 km (1.5 mile) long channelized section of Woodson Creek and restore hydrology to the adjacent riparian and scrub-shrub wetland areas within a 42.5 ha (105 acre) wetland conservation easement within a ranch owned by the Ringling Land and Cattle Company LLC. The project will provide an estimated 18 ha (44.4 acres) of COE-approved wetland credits. The Ringling Land and Cattle Company LLC will be responsible for the project allowing MDT to purchase credits from the site.

Additionally, MDT recently initiated work on a wetland feasibility study on a ranch south of Townsend in Broadwater County. The intent of the study is to determine the feasibility and cost of developing creditable wetlands within a 20 ha (50 acre) tract of land adjacent to the Missouri River located within the Hahn Ranch. It is unknown at this time whether the site is viable for a wetland project or how many wetland credits could be developed on the property.

Other Mitigating Measures. The following general measures will be implemented to minimize disturbance of wetlands and other waters of the United States during construction of the proposed project:

- *All Clean Water Act Section 404 permit conditions, as well as Section 401 water quality certification and Montana Stream Protection Act (124) conditions, and any additional state or federal water quality requirements/conditions will be complied with.*
- *Removed culverts, guardrail, and other items will not be stockpiled in or adjacent to wetland or stream areas.*
- *Whenever possible, construction in wetlands will be timed in order for these sites to be as "dry" as possible during construction to minimize sedimentation as well as construction difficulties.*
- *Construction equipment operating in wetlands will be limited to that which is needed to perform the necessary work.*
- *Disturbed wetland and streamside areas will be revegetated with salvaged wetlands material and soils obtained from impacted areas, where practicable. Additionally, appropriate measures will be taken to prevent the introduction/spread of noxious weeds into wetland areas.*

- *Wide-track or balloon-tire construction equipment will be considered for use in saturated/inundated areas. Timber pads, prefabricated equipment pads, or geotextile fabric overlain with gravel fill will be considered if typical construction equipment is used in such areas. All pads and temporary fill will be removed following construction.*
- *Straw wattles or other accepted erosion and sedimentation control devices will be installed at the edges of wetlands and other waters of the U.S. prior to construction. All exposed soils will be permanently stabilized at the earliest practicable date.*
- *Hazardous materials, including fuels and lubricating oils, will not be stored within 30 m (100 feet) of wetlands or streams. Additionally, construction equipment will not be refueled within 30 m (100 feet) of such areas.*

4.2.8 IMPACTS TO THREATENED OR ENDANGERED SPECIES

EXISTING CONDITIONS. Threatened and endangered species include those species listed or proposed for listing by the U.S. FISH AND WILDLIFE SERVICE (USFWS) as threatened or endangered. Under *Section 7* of the *Endangered Species Act of 1973*, as amended (**16 U.S.C. 1531 et seq.**), activities conducted, sponsored, or funded by federal agencies must be reviewed for their effects on species federally listed or proposed for listing as threatened or endangered and any designated critical habitat for these species.

In accordance with the provisions of the *Endangered Species Act*, the current USFWS list of threatened, endangered, and proposed species for Broadwater County was consulted and range and habitat descriptions were reviewed to determine threatened, endangered, proposed, or candidate species with the potential to occur in the project area.

Based on this assessment, the following listed species may occur in the Townsend-South project area:

- Bald Eagle (*Haliaeetus leucocephalus*) - Threatened
- Ute ladies' tresses (*Spiranthes diluvialis*) - Threatened

A brief discussion of these species and their potential occurrence in the project area is presented in the following paragraphs.

Bald Eagles. In 1978, the USFWS designated the bald eagle an endangered species. The bald eagle was reclassified as a threatened species in 1995. On July 6, 1999, the USFWS proposed to remove the bald eagle from the list of threatened and endangered species.

The Missouri River and its associated riparian lands provide year-round habitat for bald eagles in the project area. Three bald eagle nest sites along the Missouri River are known to occur

within 3 km (1.8 miles) of the proposed Townsend-South project. The "Rogers" nest is located southwest of Townsend, the "Deepdale" nest located in the vicinity of the York's Islands Fishing Access Site, and the "Toston" nest near the southern terminus of the project.

In addition to nesting in the area, bald eagles feed, roost and perch along the Missouri River during spring and fall migration and throughout the winter. During these periods, eagles may prey on fish and waterfowl along the river and small mammals on adjacent farm and rangeland. Bald eagles may occasionally forage in wetlands immediately adjacent to the roadway or feed on road-killed carrion.

Ute-ladies' tresses. In 1992, the Ute-ladies' tresses orchid was designated as threatened by the USFWS. Ute ladies' tresses is one of three plant species currently listed as threatened or endangered in Montana.

This perennial orchid is known to occur at twelve locations within the Jefferson, Beaverhead, Ruby, Gallatin, Madison, and Missouri River drainages. Ute-ladies' tresses typically occur along riparian edges, gravel bars, old oxbows, high flow channels, and moist to wet meadows along perennial streams. The plants are usually found in stable wetlands and wet areas associated with old landscape features within historical floodplains of major rivers.

As discussed earlier in this PART, sensitive plant surveys conducted in 2000 identified populations of Ute ladies' tresses in the project area between the Montana Rail Link railroad line and the existing highway near the York's Islands Fishing Access Site. Because a dormancy state is common in Ute ladies' tresses, particularly during drought conditions (such as in 2000 when the initial survey occurred), plant counts can vary greatly from year to year. For this reason, a survey for the species was performed in 2001 to verify the population near the fishing access site and to search for the species at other locations in the corridor.

The 2001 plant survey identified a small population of Ute-ladies' tresses near the Montana Ditch (RP 79). Previously identified populations of Ute ladies' tresses were monitored again during 2002. Additional plants were identified in the area of the fishing access site but the plants near the Montana Ditch were not relocated.

The three years of monitoring indicates that the number of flowering Ute ladies' tresses plants located along the highway fluctuates from year to year and that some plants may not flower in many years.

IMPACTS OF THE PREFERRED ALTERNATIVE. Impacts to threatened and endangered species can be categorized as direct or indirect effects and such effects may be short-term or long-term. Direct effects are **results** of the proposed action. Direct effects may include loss of habitat and mortality of

individuals. Indirect effects are effects caused by the proposed action that are reasonably certain to occur.

The potential impacts on identified threatened and endangered species associated with reconstructing U.S. Highway 287 in the Townsend-South project area are described below.

Impacts to Bald Eagles. The *Habitat Management Guide for Bald Eagles In Northwestern Montana* (prepared by the Montana Bald Eagle Working Group in 1991) defines three primary zones associated with bald eagle nests. The *nest site area* includes the area within 400 m (0.2 mile) of the existing and alternate nests. Eagles are most sensitive to human activity within this zone, and will react to intrusion. The *primary use area* includes the area heavily used by a nesting pair, or an 800 m (0.5 mile) radius from the occupied and alternate nests. The *home range* represents all areas used by the eagles during the nesting season. In the absence of site-specific data, the area within a 4 km (2.5 mile) radius is considered as a minimum home range.

Based on these parameters, the proposed project falls within the anticipated home range of all three bald eagle nests, and within the primary use area of the Deepdale nest.

With respect to the Deepdale nest, bald eagles have likely become accustomed to moderate levels of disturbance associated with the highway, railroad, nearby fishing access site, and boaters and bank fisherman. Although a short section of the highway project falls within the primary use area, identifiable impacts from construction activities are unlikely. With respect to all three nesting territories, none of the actual nest trees and all known and potential nest and roost trees fall outside proposed construction limits of the project.

Due to the year-round presence of bald eagles along the project route, construction activities during all seasons could conceivably temporarily disturb or displace eagles where the project is visible from nesting, roosting and foraging habitat. However, because the areas and duration of disturbance would be relatively confined and occur in a currently disturbed corridor, and similar undisturbed habitat for any displaced birds is abundant in the surrounding area, these impacts are not considered substantial.

Exposure of soils associated with project activities could result in temporary increases in turbidity in Deep Creek, Greyson Creek, Dry Creek, and the Missouri River. Water quality would be indirectly affected over the short term by the introduction of pollutants from runoff over disturbed surfaces during storm events. If notable enough, turbidity and suspended sediment could reduce stream productivity and indirectly affect feeding opportunities for bald eagles.

These temporary impacts should be reduced by implementing standard best management practices for sediment/erosion control during construction and through compliance with

project-specific conditions to be specified in water quality-related environmental permits required for the project.

Should vehicle speeds increase as a result of highway improvements, the risk of injury or mortality due to vehicle collisions with eagles feeding on highway carrion would be elevated. However, highway improvements would also increase the visibility of eagles on or near the highway to motorists and should help avoid such collisions. Prompt removal of roadkill deer and other wildlife from the highway would further reduce the potential for vehicles to collide with eagles on the highway.

Conservation Measures for Bald Eagles. The following are recommended conservation measures that would be implemented to minimize impacts to bald eagles:

- *An MDT biologist prior to construction will confirm the nesting status of bald eagles in the project area. At a minimum, coordination with local resource agency biologists and a MNHP records check will occur. Further coordination with the USFWS may be required should a new nest site ultimately be discovered in the project area. Depending on the location of such nests, if any, appropriate special and temporal construction restrictions may be warranted.*
- *The location for construction-related activities, such as staging and borrow/gravel source activities, are independently determined by the construction contractor, who is responsible for compliance with all laws and activities associated with those activities. If MDT becomes aware of any threatened, endangered, proposed or candidate species located in the vicinity of these activities, MDT will inform the contractor of those locations and of potential restrictions that may be associated with avoiding impacts to those species. MDT will also recommend that MDT's contractor contacts and coordinates with the USFWS.*
- *Areas disturbed within the MDT Right-of-Way or construction easements will be reseeded as quickly as practicable after construction.*
- *Best Management Practices (BMPs) will be followed to minimize the potential for increasing sediment loads in any of the project area waterways.*

Determination of Effect – Bald Eagles. Based on the above information and recommended conservation measures, a determination of **May Affect, Not Likely to Adversely Affect** is appropriate with respect to the anticipated effects on bald eagles due to the proposed Townsend-South project.

Impacts to Ute ladies' tresses. Expansion of the highway through the project corridor would likely result in direct and/or indirect impacts to known Ute ladies' tresses populations and

suitable habitat for the species. The preliminary design for the proposed project has been developed with a goal of avoiding known populations of Ute ladies'-tresses in the corridor. The mapped locations of these populations were considered in MDT's preliminary design efforts and known locations for Ute ladies'-tresses would be outside the required construction limits for the proposed design.

However, given the large amount of wetlands adjacent to the existing highway and the anticipated impacts to these wetlands, some suitable habitat for Ute ladies' tresses would be permanently impacted due to the proposed highway reconstruction. Because suitable habitat for the species occurs along both sides of the existing highway, impacting habitat for this plant is unavoidable. Also, despite extensive monitoring efforts, Ute ladies' tresses may be impacted in other locations within anticipated construction limits that have not yet been identified due to the dormancy state associated with the plants.

Indirect impacts, though not anticipated, may occur as a result of habitat alterations, primarily alterations to hydrology along the highway corridor. Expansion of the roadway could potentially affect ground and surface water characteristics in the project corridor, thus indirectly affecting wetland habitat along the roadway. MDT is taking this potential effect into consideration and has no plans to intentionally alter water flow such that adjacent habitats would be significantly affected.

Determination of Effect – Ute ladies' tresses. Based on the above information and recommended conservation measures, a determination of **May Affect, Likely to Adversely Affect** was made with respect to project-related effects to Ute ladies' tresses.

Formal consultation regarding any listed species is necessary under the *Endangered Species Act* if the proposed action may affect any listed species or critical habitat. Formal consultation with the USFWS was initiated in January 2005 regarding project-related effects on Ute ladies' tresses. Formal consultation was concluded on June 9, 2005 when the USFWS issued a Biological Opinion stating the project would not jeopardize the continued existence of Ute ladies' tresses. The Biological Opinion will remain valid through the implementation of the project unless the design notably changes; previously unanticipated effects to the species are identified; or a new species is listed or critical habitat designated that may be affected by the project.

Conservation Measures for Ute ladies' tresses. The Biological Opinion included conservation recommendations to help minimize or avoid effects to Ute ladies' tresses and its habitat in the project area. The following conservation recommendations will be implemented for this project:

- *The roadway alignment will be designed to avoid known populations of Ute ladies' tresses and efforts will be taken to minimize effects to wetlands that provide habitat for this species.*

- *Areas with known populations of Ute ladies' tresses and other sensitive plants will be shown on MDT's design plans. MDT's biologist will also "flag" the known locations of Ute ladies' tresses prior to the start of construction. The contractor will also be required to place temporary fencing around the flagged locations to help ensure that construction activities do not impact these sensitive areas.*
- *Clearing and grubbing operations will be restricted to the minimum area necessary to accommodate the planned reconstruction activities and improvements.*
- *To minimize potential indirect effects of the proposed project on known Ute ladies' tresses locations, current hydrologic conditions within the roadside ditches will be maintained to the extent practicable to prevent wetland habitat from drying out or becoming too wet to support this species.*
- *The project corridor will be surveyed again for Ute ladies' tresses prior to construction.*

IMPACTS OF THE NO ACTION ALTERNATIVE. The No Action Alternative would not result in new impacts to either bald eagles or Ute ladies' tresses.

4.2.9 IMPACTS TO WILDLIFE RESOURCES

EXISTING CONDITIONS. Wildlife species inhabiting the project area are typical of those that occur in grasslands, cultivated lands, riparian areas and wetlands of central Montana. Common mammals occupying habitats in the general project area include: mule deer, white-tailed deer, porcupine, raccoon, striped skunk, badger, bobcat, coyote, red fox, muskrat, ground squirrel, deer mouse, and meadow vole.

During the 1990's, the Montana Bird Distribution Committee compiled observations of 146 different bird species within the general geographic area of this project. Commonly observed birds in the corridor include osprey, mourning dove, European starling, black-billed magpie, ring-necked pheasant, red-winged blackbird, and yellow-headed blackbird. The MNHP database shows two great blue heron rookeries occur along the Missouri River west of the project corridor.

Waterfowl are seasonally abundant in the project area, utilizing the numerous open water/emergent marsh wetlands adjacent to the roadway and the Missouri River to the west. Several species including cinnamon, blue-winged and green-winged teal, mallards, ruddy ducks, pintail, wood ducks and northern shovelers use wetland habitat adjacent to the roadway. The Missouri River and open water habitats adjacent to the roadway also provide resting habitat for spring and fall migrating

waterfowl.

Raptors observed during the survey include northern harrier, red-tailed hawk, American kestrel, osprey, and bald eagle. Two artificial osprey nest structures and three bald eagle nest occur along the project corridor. Habitat quality for large raptors adjacent to the alignment is judged to be high, based on the diversity of habitats associated with the nearby Missouri River cottonwood riparian bottom and extensive wetland habitat immediately adjacent to the roadway.

Cliff swallows are known to nest inside or underneath the structures over the Montana Ditch, Deep Creek, and the Deep Creek overflow. Nesting may also occur at the Dry Creek crossing and the Big Spring Ditch although nesting was not apparent during field reviews of these structures.

Amphibians and reptiles likely to occur in the project area include the various toads and frogs, painted turtle, racer, rubber boa, gopher snake, western rattlesnake, and garter snakes.

Rare and Sensitive Species. A search of the MNHP database revealed no known occurrences of wildlife species of concern within the general area of the project. Animals listed as species of special concern by the MNHP that could occur are listed below:

<i>Northern leopard frog</i>	<i>Ferruginous Hawk</i>
<i>Mountain Plover</i>	<i>Peregrine Falcon</i>
<i>Burrowing Owl</i>	<i>American White Pelican</i>
<i>Northern Goshawk</i>	<i>Forster's Tern</i>
<i>Common Tern</i>	<i>Caspian Tern</i>
<i>Dwarf shrew</i>	<i>Townsend's big-eared bat</i>
<i>Black-tailed prairie dog</i>	

Of these species, only the American White pelican is commonly seen in the general project area.

IMPACTS OF THE PREFERRED ALTERNATIVE. In general, the impacts on wildlife associated with the reconstruction of U.S. Highway 287 would include: the temporary loss of and avoidance of habitats adjacent to the construction area; direct mortality from vehicles and construction equipment; and permanent habitat degradation and/or displacement.

Construction of the project could result in direct wildlife mortality, primarily to those species with limited mobility and/or those that could conceivably be in burrows or nests at the time of construction (e.g., mice, voles, young birds/eggs, frogs, salamanders, snakes, badgers, ground squirrels.). More mobile species, such as adult deer, coyotes, and most adult birds, would be able to avoid direct mortality by moving into adjacent habitat.

Construction activities in the vicinity of occupied osprey nests in the corridor could cause adults to abandon their nesting attempt, or flush from the nest, exposing eggs or young to

predation. The osprey using the nests along the project have likely become habituated to noise and traffic associated with the highway and railroad. For this reason, osprey would be expected to be tolerant to construction activities, especially those conducted outside of particularly sensitive periods for the species.

Generally, only minor indirect disturbance to wildlife communities is expected to result from actual construction activities. Such disturbance would be temporary and alternative habitat similar to that which would be affected is abundant in the general area, including wetland and riparian habitat associated with the Missouri River floodplain.

The Preferred Alternative would result in minor adverse effects to migratory bird species identified in 50 CFR 10.13 and addressed in Executive Order 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*) signed in January 2001. Although not substantial, the project has the potential for direct impacts to nesting waterfowl in the general area and their use of suitable habitat along U.S. Highway 287 during the spring. The proposed project would permanently displace some migratory birds from habitat occupied by the new road and would likely cause temporarily displace such species from habitats disturbed by road reconstruction activities.

Additionally, the demolition of bridges or culverts at the Montana Ditch, Deep Creek, and Deep Creek Overflow (and possibly other structures in the project area) could result indirect impacts to cliff swallow eggs or young if conducted during the nesting season.

As discussed earlier, no species of special concern are known from the immediate project corridor, and none were observed during reconnaissance surveys by consulting biologists. Several of the rare and sensitive species identified earlier, however, may occur in the general area. Based on the lack of records for and observations of species of special concern in the project corridor, substantial impacts to these species are not anticipated. Any of these species which are present in the project corridor, but for which no records or observations exist, would be subject to the impacts discussed above.

Habitat fragmentation is often a concern with linear transportation projects. Habitat fragmentation occurs when previously contiguous blocks of habitat are separated into one or more disconnected areas dividing populations into smaller, more isolated units. Habitat fragmentation can result in impediments to wildlife dispersal and corresponding genetic exchange among populations. The existing highway and railroad, in association with the agricultural and light residential development, presently contribute to habitat fragmentation in the project area.

Implementation of the project would add to habitat fragmentation in the project area by further reducing the amount of physical cover adjacent to the highway and

incrementally increasing separation between cross-highway habitats. The planned widening would increase the separation of habitat on either side of the highway reducing roadside cover and making it more difficult for some species to safely cross the road.

Based on available data, a certain level of impediment to wildlife movement is occurring, as exemplified by high mortality rates and concentrated mortality areas. One of the field reviews undertaken for the Biological Resources Report in 2001 placed an emphasis on locating existing animal crossings and high concentrations of road-killed wildlife. Consulting biologists positively identified 51 wild animal carcasses along the highway between RP 80.0 and 83.2, an area of the corridor with extensive wetlands. White-tailed deer made up a majority of the carcasses (40) with the remaining carcasses included those of various small mammals and even an elk. Given the state of decomposition, biologists believed most of the observed carcasses to be less than a year old.

With dense riparian habitat along the Missouri River bottom west of the highway and agricultural land to the east, whitetails routinely cross the roadway as they travel between cover and food sources. While deer could potentially cross the highway at any point over the project length, deer mortality is concentrated between RP 80 and 83, and more specifically, between RP 80.7 and 81.3, where 21 deer carcasses were found.

As with the deer, the wetland habitat adjoining both sides of the highway between RP 80.0 and 83.0 provides habitat for several small mammal species. Much of this area has no hydrologic connection between opposite sides of the road, thus forcing wildlife to cross over the roadway to get to habitat on the other side.

Studies relating the frequency of roadkills to posted speed limits and actual vehicle travel speeds in Yellowstone National Park. The Yellowstone study determined that vehicle speed was the primary factor contributing to animal-vehicle collisions. Road design appeared to influence vehicle speed more than the posted speed limit with vehicles traveling slightly faster on a newly constructed road segments. Actual travel speeds were also found to be substantially higher than posted speed limits on road segments where the road's design and condition did not act to slow vehicle speeds.

Although adjoining land uses, wildlife habitation, and vehicle operations in the Townsend-South corridor differ from those in Yellowstone National Park, it is recognized that travel speeds may increase somewhat as a result of the proposed improvements. Higher travel speeds, along with projected traffic increases, could increase wildlife mortalities in the corridor. Increased driver sight distance along with the planned road and shoulder widening, would help offset potential increases in wildlife mortalities to some extent by affording drivers better opportunities to identify and avoid wildlife on the highway.

Actions to help minimize animal-vehicle collisions are limited by the area's poorly suited topography – the road cannot be raised to accommodate wildlife underpasses in many areas without substantially increasing impacts to roadside wetlands. Signing to increase the awareness of wildlife crossings is a practical measure, yet only moderately effective method for minimizing collisions.

Some opportunities do exist to increase habitat connectivity and wildlife passage for mammals within the project corridor. The proposed bridge at Deep Creek (RP 80.0) affords an opportunity to enhance wildlife passage beneath the roadway at this location. MDT proposes to provide 0.5 m (1.6-foot) wide benches on both sides of the channel beneath the ends of the new bridge. This would allow terrestrial wildlife to pass underneath the structures throughout the year except perhaps during extremely high runoff events.

MDT also proposes to install a standard stockpass (employing a large-diameter culvert) beneath the road at the Deep Creek Overflow crossing. The bottom of the culvert would be buried to facilitate wildlife passage and fencing would be installed to help direct wildlife to the stockpass.

Drainage culverts are used by several species of small mammals to move between habitats on opposite sides of roadways at Greyson Creek and Dry Creek. Perpetuating existing culverts at these locations and providing new installations specifically for small mammal use elsewhere in the corridor are actions that would enhance wildlife passage beneath the new road. New small mammal culverts would be placed above typical flow elevations and standing water levels in wetlands so they remain dry and useable throughout the year.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would cause no new impacts to wildlife resources or habitat in the Townsend-South project area.

MITIGATION MEASURES. MDT will implement the following measures to ensure that adverse impacts to wildlife species are minimized or avoided:

- *Clearing and grubbing operations will be restricted to the minimum area necessary to accommodate the planned reconstruction activities and improvements.*
- *Best Management Practices (BMPs) will be followed to minimize the potential for increasing sediment loads in any of the project area waterways.*
- *Areas disturbed within the MDT Right-of-Way or construction easements will be reseeded as quickly as practicable after construction.*
- *Disturbed wetland and streamside areas will be revegetated with salvaged wetlands material and soils*

obtained from impacted areas, where practicable.

- *MDT will include 0.5 m (1.6 foot) wide benches underneath the ends of the new bridge at Deep Creek to facilitate wildlife passage.*
- *To enhance small mammal crossings of the highway, culvert installations will be perpetuated at RP 79.0 and RP 81.1 and 600 mm (24-inch) diameter pipes will be installed in the upper half of the roadway prism in the vicinity of RP 79.3, 81.3, RP 81.6, RP 82.3, RP 82.6, and RP 83.4.*
- *To enhance crossings of the highway for larger mammals, a new 2100 mm (82-inch) diameter culvert (stockpass) will be installed at RP 81.3.*
- *Prior to construction, an MNHP records check for new sensitive species occurrences will be performed in the project area.*
- *Prior to the nesting season (typically mid-May through mid-July), MDT will require the Contractor to remove old nest material from inside or underneath structures where swallow nesting is known or suspected and install physical measures (such as plastic netting or wire) to exclude cliff swallows from establishing new nests or reoccupying old nests. MDT will also require that the demolition of bridges or culverts where swallow nesting is known or suspected occurs outside the nesting season.*

4.2.10 IMPACTS TO AQUATIC RESOURCES

EXISTING CONDITIONS. Streams traversed by the existing alignment include Deep Creek, Deep Creek Overflow, Greyson Creek, and Dry Creek. Two irrigation facilities, the Montana Ditch and Big Spring Ditch, also pass underneath the roadway.

The Missouri River occurs west of and parallels the project for its entire length at distances ranging between approximately 0.2 km (0.12 mi) and 4.0 km (2.0 mi). Additionally, the existing roadway bisects several historic meanders of the Missouri River.

According to the Montana Rivers Information System (MFISH 2004), Deep Creek has an outstanding fisheries resource value, and supports several game and non-game species including: brook, brown, and rainbow trout, white sucker, Flathead chub, longnose dace, longnose sucker, and mottled sculpin. In addition to the resident species, rainbow trout from Canyon Ferry Reservoir and the Missouri River likely spawn in reaches of Deep Creek above the highway crossing.

The Deep Creek Overflow channel is dry during most of the year,

and only carries water during extreme runoff events in the main Deep Creek channel. Greyson Creek, an intermittent tributary of the Missouri River, has limited fisheries resource values and supports small numbers of brook and rainbow trout.

Dry Creek is a perennial tributary of the Missouri River. According to MFISH 2004, this stream has an outstanding fisheries resource value, and supports several fish species including: brook trout, brown trout, rainbow trout, and mottled sculpin. Like Deep Creek, rainbow trout from Canyon Ferry Reservoir and the Missouri River spawn in reaches of Dry Creek above the highway crossing.

As stated previously, the Missouri River occurs west of and parallels the project corridor for its entire length. In addition to species already mentioned for area tributary streams, fish species in this section of the Missouri River include: burbot, common carp, white sucker, northern pike, largemouth bass, mountain sucker, mountain whitefish, and stonecat.

In the vicinity of the highway, Deep Creek has a low to moderate gradient with well-vegetated, stable banks and a gravel/cobble substrate. The existing highway bridge at Deep Creek allows fish to freely pass up and downstream. However, fish passage problems exist at Greyson Creek and Dry Creek. Sharp changes in elevations exist between the outfalls of culverts beneath the railroad and at each stream's confluence with the Missouri River. Elevation differences of about 1 m (3 feet) at these railroad culvert outfalls likely impedes upstream passage under most flow conditions for resident or spawning fish from the Missouri. Fish passage for spring spawning rainbows is possible at Dry Creek as Missouri River levels rise and flows increase within the stream.

Withdrawals for irrigation have also created chronic dewatering problems in Deep Creek, Greyson Creek, and Dry Creek.

Rare & Sensitive Fish Species. No rare or sensitive fish species have been documented or are suspected in the general project area, and none are expected within any of the natural drainages or man-made conveyances traversed by the proposed project.

IMPACTS OF THE PREFERRED ALTERNATIVE. Impacts to project area drainages would primarily result from direct disturbances associated with bridge construction/removal, culvert replacements, highway fill placement, and pipe inlet/outlet channel realignment and stabilization. Road obliteration and general clearing and grubbing would occur adjacent to project area drainages. Existing impacts from sand/gravel use during the winter months and general highway runoff are expected to continue following construction.

Construction activities would result in temporary increased erosion potential, reduced slope stability, and could temporarily increase turbidity in streams downstream of the project;

indirectly affected over the short term by the influx of fuel and other pollutants from unpaved surfaces during storm events, which could temporarily affect stream productivity in the immediate project area.

The replacement or removal of bridges and culverts and other instream activities would result in temporary turbidity increases by disturbing drainage bottoms and re-suspending existing sediments in the water column. Widening the paved surface of the highway would result in increased runoff and incremental increased flow into the Missouri River drainage. Exposure of any cut slopes and fill slopes in the project area would provide a continuing source of sediment into the local system during precipitation events until stabilized.

Increases in turbidity, suspended sediment, and other pollutants can reduce stream productivity, reduce feeding opportunities for fish, and result in fish avoidance of important habitat. Deposited sediments reduce habitat volume by filling pools and spaces between gravel, which are critical to young fish. As no spawning is known or suspected in Deep, Greyson, and Dry Creek downstream of the highway, impacts to eggs are not expected. To minimize sedimentation as well as construction hardship, it is recommended that construction in and adjacent to wetlands and streams be timed in order for these sites to be as "dry" as possible during construction, if practicable.

Since traffic would be maintained on the existing roadway during the project, no temporary detours across streams are expected. If ultimately required for the project, clearance for the placement of such detours would be the responsibility of the contractor.

Prior to and during construction, MDT would obtain and comply with various state and federal water quality permits in association with this project. Section 208 of the MDT *Standard Specifications for Road and Bridge Construction* (MDT 1995) specifies the process with which the contractor must comply to prevent and control the siltation of lakes, streams, rivers, ponds, and other wetlands. The contractor must also comply with all state and federal laws or regulations for preventing or abating erosion, water pollution, and siltation.

Fish passage is currently provided at Deep, Greyson, and Dry Creeks and would be maintained with this project. A stream crossing design that provides up and downstream passage for all species regardless of size, age-class, or swimming ability is desirable at each crossing, but may not be possible depending on gradient, culvert length, and velocities.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would cause no further impacts to aquatic resources in the Townsend-South project area.

MITIGATION MEASURES. MDT will implement the following measures to ensure that adverse impacts to aquatic resources are minimized or avoided. Additional state and federal water quality permit conditions may be stipulated at the time of permit issuance.

- *Construction equipment will not be permitted within the active channel of Deep, Greyson, and Dry Creeks (unless otherwise permitted by the regulatory agencies).*
- *The Contractor will be required to comply with the conditions attached to permits for the project including any measures deemed necessary to prevent the spread of whirling disease to other waters.*
- *Clearing and grubbing operations will be restricted to the minimum area necessary to accommodate the planned reconstruction activities and improvements.*
- *A Stormwater Pollution Prevention Plan (SWPPP) employing Best Management Practices for controlling erosion and sediment will be designed by MDT and approved by the MDEQ prior to construction.*
- *Any restrictions on work near streams or in wetlands will be specified as terms of water related permits obtained from MDEQ, MDFWP, and the COE.*
- *Removed culverts, guardrail, and other items will not be stockpiled in or adjacent to wetland or stream areas.*
- *Construction equipment operating in wetlands will be limited to that which is needed to perform the necessary work. The width of the construction zone will be minimized to the extent practicable in wetland and stream areas.*
- *Disturbed wetland and streamside areas will be revegetated with salvaged wetlands material and soils obtained from impacted areas, where practicable.*

4.3 IMPACTS TO THE HUMAN AND CULTURAL ENVIRONMENTS

4.3.1 LAND USE IMPACTS

LAND OWNERSHIP. The Townsend-South project begins at the southern city limits of the City of Townsend so the entire project area lies within rural Broadwater County. The county encompasses some 322,000 ha (796,000 acres) with about 65% of the area being privately owned and 35% in public ownership. The major public land owners in the County include the U.S. FOREST SERVICE, U.S. BUREAU OF LAND MANAGEMENT, and STATE OF MONTANA.

The lands within the Townsend-South project area are almost entirely under private ownership. MDFWP manages the York's Islands Fishing Access Site (FAS), a public recreation site on the Missouri River west of the highway. Montana Rail Link owns and

maintains a transportation corridor that parallels U.S. Highway 287 through the entire project area.

EXISTING LAND USES. The majority of the Townsend-South corridor passes through rural farmland. U.S. Highway 287 provides access to various residences and farm fields situated adjacent to and near the highway. At the beginning of the project, the highway passes through an area of low-density commercial development just south of the Townsend city limits. The highway north of the project area serves as one of the main streets of the community. York's Islands FAS is accessed from U.S. Highway 287 at RP 81.5.

APPLICABLE LAND USE PLANS. Land uses in Broadwater County are generally regulated by an approved growth policy. The County Commission adopted the *Broadwater County Growth Policy Plan & Comprehensive Economic Development Strategy* in July 2003. The growth policy document replaces the county's 1980 comprehensive plan. Broadwater County is one of only two counties in Montana that have combined a growth policy with an economic development plan. The County's expectation is that conflicts associated with community growth can be avoided by integrating growth management policies with economic development strategies.

The Broadwater County Commissioners and the County Planning Board are the responsible entities for implementing the growth policy and associated subdivision regulations. Work is underway to revise the county's subdivision regulations to conform to the new growth policy document.

The *Broadwater County Growth Policy Plan & Comprehensive Economic Development Strategy* identifies several preferred locations for new development in the County. Preferred development locations for industrial and commercial were identified for areas with access to transportation facilities, water supplies, and electrical power) and in areas that avoid areas with environmental hazards, and conflicts with existing residences. Preferable locations for new residential development are in areas close to existing communities with good access to water supplies and public roads, in areas that avoid areas with environmental hazards, and in areas that minimize the loss of productive agricultural land. Preferred development locations were identified for lands immediately northwest and east of Townsend, near the community of Toston, and north of the junction of U.S Highway 287 and I-90.

IMPACTS OF THE PREFERRED ALTERNATIVE. The proposed improvement of U.S. Highway 287 would impact minor amounts of land adjacent to the existing highway. With the exception of developed lands at the south edge of Townsend and scattered rural residences, nearly all of the affected land is used for livestock grazing, raising forage crops, or farming.

The proposed project would not adversely affect highway commercial, commercial, or residential developments located

along the roadway. No preferred development locations listed in the *Broadwater County Growth Policy Plan & Comprehensive Economic Development Strategy* exist in the Townsend-South project corridor.

Impacts to agricultural land uses would include the acquisition of cropland and pasture land for new highway right-of-way and modifications to field access locations. Generally, access to farm fields or pastures from the new roadway would be maintained, although the location of access points may be moved to ensure adequate sight distance is provided along the new road.

The implementation of limited access control within the project corridor could result in some existing accesses being relocated, combined or even closed. However, the access management provisions implemented with this project would ensure that reasonable access is maintained for all properties and land uses adjoining the highway.

The Townsend-South project would not directly affect any state land but would rebuild the U.S. Highway 287 approach to the York's Islands FAS.

The proposed reconstruction of U.S. Highway 287 would not conflict with the goals, objectives and policies outlined in the *Broadwater County Growth Policy Plan & Comprehensive Economic Development Strategy*.

IMPACTS OF THE NO BUILD ALTERNATIVE. This alternative would cause no changes to existing land uses along U.S. Highway 287.

MITIGATION MEASURES. No mitigating measures are proposed for land use impacts associated with this proposed project. Measures to mitigate the impacts of new right-of-way acquisition are discussed in the following section.

4.3.2 RIGHT-OF-WAY AND UTILITY IMPACTS

EXISTING CONDITIONS. The existing right-of-way corridor for U.S. Highway 287 is typically 27.6 m (90 feet) wide with the roadway centered within the corridor. Over the length of the proposed Townsend-South project, the existing road and its right-of-way encompasses about 37.4 ha (92.4 acres). MDT's preliminary Right-of-Way Plans list thirty different owners for properties adjoining the existing highway.

Overhead power lines, underground telephone cables, buried fiber optic lines, and other utilities cross or exist adjacent to the existing road throughout the Townsend-South project area. A high voltage overhead transmission line crosses the highway north of the Litening Barn Road intersection at about RP 82.8.

The existing highway does not cross any public water or sewer

lines. Residential and commercial properties throughout the corridor utilize wells as a source of domestic water and individual sewage disposal systems with septic drain fields to manage wastewater.

Irrigation facilities owned by the Montana Ditch Company, the Broadwater-Missouri Water Users Association, or by private parties are located adjacent to or crossed by the existing road.

As indicated previously, the Montana Rail Link rail line and its associated transportation corridor parallels U.S. Highway 287 through the entire project area. The Montana Rail Link's mainline track is located about 46 m (150 feet) west of the existing highway.

IMPACTS OF THE PREFERRED ALTERNATIVE. U.S. Highway 287 would be reconstructed to closely follow the existing alignment through the project corridor. From the Townsend city limits to approximately RP 78.7, the centerline of the new road would closely follow that of the existing highway. South of RP 78.7, the centerline would be shifted about 10 m (33 feet) to the east and would parallel the existing road to about RP 83.5 (near the highway's crossing of Dry Creek). South of RP 83.5, the new road's centerline would be shifted to the west and parallel the existing east shoulder to RP 86.1.

The Preferred Alternative would require areas of new right-of-way over its entire length. The additional right-of-way is necessary to accommodate road widening, adequate clear zones, and utility relocations throughout the project corridor. New right-of-way acquisition would result in the loss of minor areas of cultivated and grazing lands adjacent to the highway corridor.

Based on preliminary right-of-way plans for this project, the reconstructed highway would occupy a total right-of-way area of about 67.0 ha (165.4 acres). Estimates from the preliminary Right-of-Way Plans show that about 29.6 ha (73.0 acres) of new right-of-way would be required for the Townsend-South project.

Due to the planned alignment shift, the majority of the right-of-way would be required from properties east of the present highway corridor. Nearly 23.0 ha (56.7 acres) of the new right-of-way area would be needed from properties east of the present highway.

The permanent new right-of-way for U.S. Highway 287 would be acquired and owned by MDT. Construction permits may also be needed at various locations to accommodate temporary construction (like slope adjustments) beyond the required permanent right-of-way corridor.

Note the right-of-way areas discussed above are subject to change since only a set of preliminary Right-of-Way plans exists for the proposed project. During the design process, MDT would identify specific right-of-way needs from lands along the

proposed alignment of U.S. Highway 287. Prior to construction, affected landowners would be contacted about the acquisition of new land needed for the highway and remedies for right-of-way effects to the remainder of their property.

At the request of the landowner, MDT has completed the advance acquisition of a residence and necessary right-of-way from property east of the existing highway at about RP 85.2. The Preferred Alternative would not require the relocation of any other residences or businesses to accommodate planned reconstruction of the highway.

The Preferred Alternative would replace irrigation ditch crossings on U.S. Highway 287 with new box culverts or pipes. Other irrigation facilities impacted by the planned reconstruction would be replaced or modified as needed. Preliminary design plans also indicate the need for realigning a section of the Big Spring Ditch where this irrigation feature crosses the highway near RP 85.8.

The acquisition of land or improvements for highway construction is governed by state and federal laws and regulations designed to protect both the landowners and taxpaying public. Landowners affected are entitled to receive fair market value for any land or buildings acquired and any damages as defined by law to remaining land due to the effects of highway construction. This action would be in accordance with the *UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACT* of 1970 (**P.L. 91-646** as amended), (**42 U.S.C 4601**, et. seq.) and the *UNIFORM RELOCATION ACT AMENDMENTS* of 1987 (**P.L. 100-17**).

Access management would be implemented with a goal of maintaining reasonable access to all residents and businesses within the corridor. Access management in the Townsend-South project area would help address significant traffic safety concerns and enhance the operation of the roadway resulting in benefits to adjoining properties.

Overhead power lines, underground telephone cables, buried fiber optic lines, and other utilities cross or exist adjacent to the existing road throughout the Townsend- South project area. Some of these utilities may be in conflict with the proposed highway reconstruction at various locations. Conflicting utilities would be relocated prior to construction.

Parallel easements may be required from Montana Rail Link at several locations due to minor encroachments on the railroad corridor. Montana Rail Link has indicated it would consider granting parallel easements within 30 m (100 feet) of the mainline track at locations where no public road crossings of the railroad exist.

IMPACTS OF THE NO ACTION ALTERNATIVE. The No Build Alternative would not require any additional right-of-way, affect existing utilities or irrigation facilities, or result in the relocation of residents or businesses in the area.

MITIGATION MEASURES. The following measures will be implemented to minimize the right-of-way and utilities impacts associated with the proposed highway improvements:

- *MDT's Right-of-Way design for this project will attempt to minimize the area required for the new highway and adverse effects on adjoining landowners. Temporary construction permits will be used when possible to minimize the need for new right-of-way.*
- *Right-of-way acquisition will be in accordance with the UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACT of 1970 (the Uniform Act) and its subsequent amendments in 1987. The Uniform Act provides for fair and equitable treatment of persons whose property will be acquired or who will be displaced because of programs or projects financed with Federal funds.*
- *MDT will coordinate with the appropriate utility companies to determine the timing and details of relocating conflicting utilities.*

4.3.3 TRANSPORTATION AND CIRCULATION

EXISTING CONDITIONS. As described in detail in PART 2.0, the existing highway has physical deficiencies that contribute to reduced safety and convenience for users of this route. U.S. Highway 287 is a regionally and locally important transportation route. The highway presently serves as the primary roadway for commercial traffic, commuters, and visitors to Canyon Ferry Reservoir and its surrounding recreational lands. The highway also functions as a principal route for farm-to-market needs and local travel by residents of the Townsend-Toston area.

IMPACTS OF THE PREFERRED ALTERNATIVE.

Rebuilding U.S. Highway 287 would provide traffic safety benefits and a more efficient facility for local residents and other highway users. Road reconstruction would enhance traffic operations and safety by: increasing the width of the roadway; adding new passing areas in both directions at three locations; providing left turn lanes at public roads; constructing safe roadside slopes; and providing access management within the project corridor. These measures would help to reduce the chances for and severity of accidents. The highway would be reconstructed to MDT standards that reflect designs appropriate for both the type and level of traffic using the highway facilities.

Other than restructuring access from the highway to some adjoining properties and reconfiguring public road intersections, no long-term changes to overall travel patterns would be likely due to the reconstruction of the highway. Implementing the Preferred Alternative would not result in traffic increases above those already expected to occur on this route.

IMPACTS OF THE NO ACTION ALTERNATIVE. The No Action Alternative would not change current operational conditions on U.S. Highway 287. The anticipated traffic growth on the route would decrease the operational efficiency of the facility and could ultimately increase traffic conflicts between various highway users. Unless corresponding facility improvements are made to accommodate expected growth in traffic, the frequency and/or severity of accidents could increase over time.

MITIGATION MEASURES. The following measures will be incorporated into the proposed project to minimize impacts to traffic and circulation:

- *MDT will maintain traffic through the project area during construction by allowing continued use of the existing road and will attempt to minimize delays.*
- *MDT will ensure that access to properties adjacent to the highway is maintained throughout the construction period.*

4.3.4 SOCIAL IMPACTS AND ENVIRONMENTAL JUSTICE

EXISTING AND PROJECTED POPULATION. The Townsend-South project area is located entirely in rural portions of Broadwater County. According to data from the U.S. Bureau of the Census, the year 2000 population of Broadwater County was estimated to be 4,385, and the population of the City of Townsend was 1,867. Since 1990, the population of Broadwater County has increased by more than 32 percent, while the population of Townsend has grown by over 14 percent. Historical and current populations for the City of Townsend, Broadwater County, and the State of Montana are presented below in **TABLE 4-2**.

The MONTANA DEPARTMENT OF COMMERCE, Census and Economic Information Center released estimates of recent (July 1, 2004) populations for Broadwater County and the City of Townsend in June 2005. These estimates show Broadwater County's population to be 4,530 and Townsend's population to be 1,957 as of July 1, 2004.

In December 2003, NPA Data Services, Inc. issued projections of future populations through the year 2025 for Broadwater County for the Census and Economic Information Center. Based on the NPA Data Services projections, Broadwater County's population is expected to grow by nearly 45 percent by the year 2025. This translates into an anticipated County growth rate of about 1.9 percent per year for the foreseeable future. Using the City of Townsend's growth rate of about 1.2 percent per year since 1990, the community's population may exceed 2,500 residents by 2025. Future projections of populations for the City of Townsend, Broadwater County, and the State of Montana can be viewed in **TABLE 4-2**.

Table 4-2: Population Data for Townsend, Broadwater County and State of Montana

	City of Townsend	Broadwater County	State of Montana
1990 Census ¹	1,635	3,318	799,065
2000 Census ¹	1,867	4,385	902,195
July 1, 2004 ² Estimate	1,957 ²	4,530 ³	926,685 ³
2005	1,980 ⁵	4,760 ⁴	942,580 ⁴
2010	2,100 ⁵	5,140 ⁴	989,190 ⁴
2015	2,230 ⁵	5,520 ⁴	1,039,480 ⁴
2025	2,515 ⁵	6,320 ⁴	1,148,770 ⁴

Sources:

¹ U.S. BUREAU OF THE CENSUS.

² Montana Department of Commerce, Census and Economic Information Center, Annual Estimates of the Population for Incorporated Places in Montana: April 1, 2000 to July 1, 2004 (SUB-EST2004-04-30); Release Date: June 30, 2005

³ Montana Department of Commerce, Census and Economic Information Center, Annual Estimates of the Population for Counties of Montana: April 1, 2000 to July 1, 2004 (CO-EST2004-01-30); Release Date: April 15, 2005.

⁴ MONTANA POPULATION PROJECTIONS, prepared and copyrighted by NPA Data Services, Inc., issued December 2003 accessible from (http://ceic.commerce.state.mt.us/Demog/project/NPAallcounties90-25_0104.pdf).

⁵ Population projection based on estimated growth rate of 1.2% for City of Townsend over 1990-2004 period.

SOCIO-ECONOMIC CHARACTERISTICS. Detailed population and socio-economic data for residents of Broadwater County is periodically collected and distributed by the U.S. BUREAU OF ECONOMIC ANALYSIS (BEA) and the Montana Census and Economic Information Center of the MONTANA DEPARTMENT OF COMMERCE. Based on data from these sources, the following characteristics are evident for Broadwater County residents as compared to all other State of Montana residents:

- Minorities comprised 3 percent of the County's population as compared to the state average of 9.4 percent at the time of the 2000 Census.
- About 16.4 percent of the County's residents were over the age of 65 as compared to the state average of 13.4% at the time of the 2000 Census.
- The 2000 median household income in the County was estimated to be \$33,572 as compared to a state average of \$33,281.
- The estimated per capita personal income for County residents was \$21,436 in 2002 as compared to a state average of \$24,831.
- An estimated 13.6 percent of all County residents lived below the poverty line in 2000 as compared to a statewide average of 13.3 percent.

-
- The average household size was 2.47 persons at the time of the 2000 Census similar to the 2.45 persons per household average for the entire state.

IMPACTS OF THE PREFERRED ALTERNATIVE.

Executive Order 12898 (*Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*) has been observed for this proposed project. This project would not have any significant impact on the location, distribution, density or growth rate of the population of Townsend or Broadwater County.

This alternative would not cause disproportionately high adverse human health or environmental effects on minority and low-income populations. This conclusion was made because a review of data from the 2000 Census showed there were no substantial differences in several key socio-economic characteristics (minority population, residents over age 65, median household income, and population living in poverty status) of project area residents when compared to similar data for all of Broadwater County and the State of Montana. The proposed Townsend-South project would also comply with the provisions of *TITLE VI* of the *CIVIL RIGHTS ACT* (**42 U.S.C. 2000d**, as amended) under the FHWA's regulations (**23 CFR 200**).

This alternative would provide traffic safety benefits and more efficient facility for road users through the construction of a wider roadway, provision of auxiliary lanes for turning and passing, and the enhancement of sight distance within the corridor. These improvements are expected to result in decreases in the number of accidents within the project area. In addition, the wider paved shoulders associated with the Preferred Alternative would improve safety for pedestrians and bicyclists that infrequently use the roadway.

The Preferred Alternative would indirectly benefit local school districts by improving the route used to transport students to area schools on the highway. Similarly, the improvement of this route may benefit the providers of emergency services by slightly reducing response times from Townsend to areas south of the community.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would not require the acquisition of land for highway purposes and would not displace households, businesses, or other areas used for human activities. Taking no action would not influence population growth or distribution in or near the project area. The No Action Alternative would not adversely affect any social or ethnic groups and it would not isolate or divide existing residential areas. This alternative would not create disproportionately high and adverse human health or environmental effects on minority and low-income populations in or near the Townsend-South project area.

MITIGATING MEASURES. No mitigating measures are required or proposed.

4.3.5 ECONOMIC IMPACTS

EXISTING CONDITIONS. The six largest industries in Broadwater County include manufacturing, agriculture, mining, government, tourism and travel, and transportation and public utilities. R-Y Timber (timber processing), GrayMont Western US, Inc. (lime mining and processing), and Wheat Montana (farm, processing and bakery enterprise) are the principal manufacturing/processing firms in the County.

Non-farm industries (manufacturing, mining, services, wholesale and retail trade, government, construction, etc.) comprise the largest industrial sector in the economy of Broadwater County. Private services and retail businesses account for the most jobs in the County. Of the estimated 2,100 jobs in the County in 2000, non-farm industries accounted for 85 percent of the total employment (U.S. BUREAU OF ECONOMIC ANALYSIS, Regional Economic Information System – Employment by Major Industry).

Agriculture has been and continues to be a key component of Broadwater County's economy and a major source of employment. Agriculture and agricultural services accounted for 18 percent of the 2,100 jobs in the County in 2000. According to the Census of Agriculture compiled by the U.S. Department of Agriculture's National Agricultural Statistics Service for the years 1993 and 1998, the number of farms in Broadwater County increased by 36 percent, the average size of farms decreased by 23 percent, and the amount of land in farms increased slightly over this recent period. Approximately 62 percent of the total land in the county is in farms. The top livestock commodities raised on farms and ranches in the county are cattle and sheep; while the top crop commodities grown are wheat, barley, hay and potatoes.

Townsend is the seat of government and the economic center of Broadwater County. The community provides the principal place of residence for approximately 43 percent of the County's population, and is the only place where many goods and services can be purchased locally.

Several businesses exist along U.S. Highway 287 at the beginning of the proposed project.

IMPACTS OF THE PREFERRED ALTERNATIVE. The proposed project would improve the quality of travel on an important interstate freight transportation route and travel corridor. Improved safety for all highway users would decrease the potential for serious motor vehicle accidents.

The proposed highway project would not adversely affect or cause notable long-term changes to the economy of Broadwater County or Townsend. There would be no business relocations or land acquisitions that would affect the viability of agricultural operations or businesses within the corridor.

The proposed reconstruction of U.S. Highway 287 would require an estimated 29.6 ha (73.0 acres) of new right-of-way from adjacent landowners. Right-of-way acquisition would permanently remove this amount of property (predominately agricultural land) from the tax rolls and taxes paid on the land would be lost to Broadwater County. This loss in property tax revenue would have a negligible effect on total revenues received by the County.

Temporary jobs would be created during the construction of the Townsend-South project. Also, the demand for local goods and services (food, lodging, recreation, etc.) would be increased in Townsend due to the presence of workers temporarily living in the area during the construction of the project. These beneficial economic impacts would be sustained over the period when the highway construction project is implemented.

Local spending by workers during road construction activities may cause a slight increase in the local tax revenues. This impact would likely be small and short-term.

The implementation of access management is not expected to result in substantial changes in property values in the project corridor. Literature on the subject has shown that property values often remain stable or may increase along roadways that carry significant traffic volumes so long as the traffic can flow smoothly with a minimum of congestion and conflicting movement. Access management in the Townsend-South project area would help address significant traffic safety concerns and enhance the operation of the roadway resulting in benefits to adjoining properties.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would not change economic conditions or cause any new economic impacts to residents or businesses in the project area. MDT would still be obligated to budget funds to maintain the existing facility and perform spot improvements on U.S. Highway 287.

This alternative would not require any new right-of-way and would not displace any residents or businesses. However, the No Action Alternative offers no relief to identified roadway deficiencies and associated traffic safety issues. Although not a certainty, the anticipated increases in traffic volumes on this route could contribute to a higher incidence of traffic accidents if geometric and operational improvements are not implemented.

MITIGATING MEASURES. The following measures will be implemented to minimize economic impacts of the proposed project:

- *MDT will maintain traffic through the project area during construction.*
- *Access to residences, businesses, and agricultural lands*

adjacent to the project will be perpetuated during the reconstruction of the highway.

4.3.6 NOISE IMPACTS

AMBIENT NOISE LEVELS. In September 2004, Big Sky Acoustics, LLC revised a traffic noise study previously completed in February 2001. The noise study was revised due to changes in projected traffic data and design year for the proposed reconstruction project and revisions to the preliminary design concept for this proposed project. The traffic noise study was completed following guidelines from MDT's *Traffic Noise Analysis and Abatement: Policy and Procedure Manual, June 2001* and the FHWA's *Procedures for Abatement of Highway Traffic Noise and Construction Noise*.

As part of this work, ambient (existing) noise levels were monitored at three representative properties east of the existing road (at about RP 80.5, RP 84.0, and RP 85.4) for one-hour periods on different days during September 2001. The measured distances from the existing road's centerline at these locations varied from 14.5 m (48 feet) to about 16.2 m (53 feet). Field measurements showed that ambient evening peak hour Leq(h) noise levels at the receptor locations in the project corridor were typically 67 or 68 dBA. The measured noise level at one receptor was 74 dBA due to a train sounding its horn across from the measurement location.

Leq(h) refers to equivalent, steady state sound level which, in a stated period of time (one-hour), contains the same acoustic energy as the time-varying sound level during the same period. The Leq(h) metric is useful for traffic noise studies because it uses a single number to describe the constantly fluctuating noise levels at a receiver location as vehicles pass. The term dBA represents decibels measured with a frequency weighting corresponding to the A-scale on standard sound level meters. The "A-weighted" scale filters or removes sounds frequencies undetectable by the human ear.

The noise consultant employed a noise model to predict traffic noise levels at noise-sensitive receptors (single family residences) located near the road. Based on the results of the actual noise level measurements, the FHWA's Traffic Noise Model (TNM) Version 2.5 computer program was used to predict the ambient traffic noise levels at other noise receptors within the project area. To verify the accuracy of the TNM, the computer model was also used to predict ambient noise levels at the same three representative locations where actual noise levels were measured within the corridor. The measured and predicted noise levels at two of the locations differed by only 1 dBA. The third location was discounted due to the extensive sounding of the train horn during the analysis period. Therefore, the TNM model developed for this project was judged to be reasonably accurate and acceptable for traffic noise level predictions at all noise sensitive receptors in the corridor.

Noise levels associated with traffic are often a concern at land uses along highways where highway traffic noise may affect frequent human activities. Noise-sensitive land uses in the vicinity of highways have been categorized according to the Noise Abatement Criteria (NAC) listed in 23 CFR 772. The NAC, presented below in **TABLE 4-3** are a set of guidelines established by the FHWA to help determine when traffic noise is no longer compatible with uses of adjacent lands. Maximum exterior (and sometimes interior) noise levels are specified for each NAC Activity Category.

**Table 4-3: Noise Abatement Criteria (NAC)
Hourly A-Weighted Sound Level in Decibels (dBA)**

Activity Category	Leq(h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: "Procedures for Abatement of Highway Traffic Noise and Construction Noise" (23 CFR Part 772).

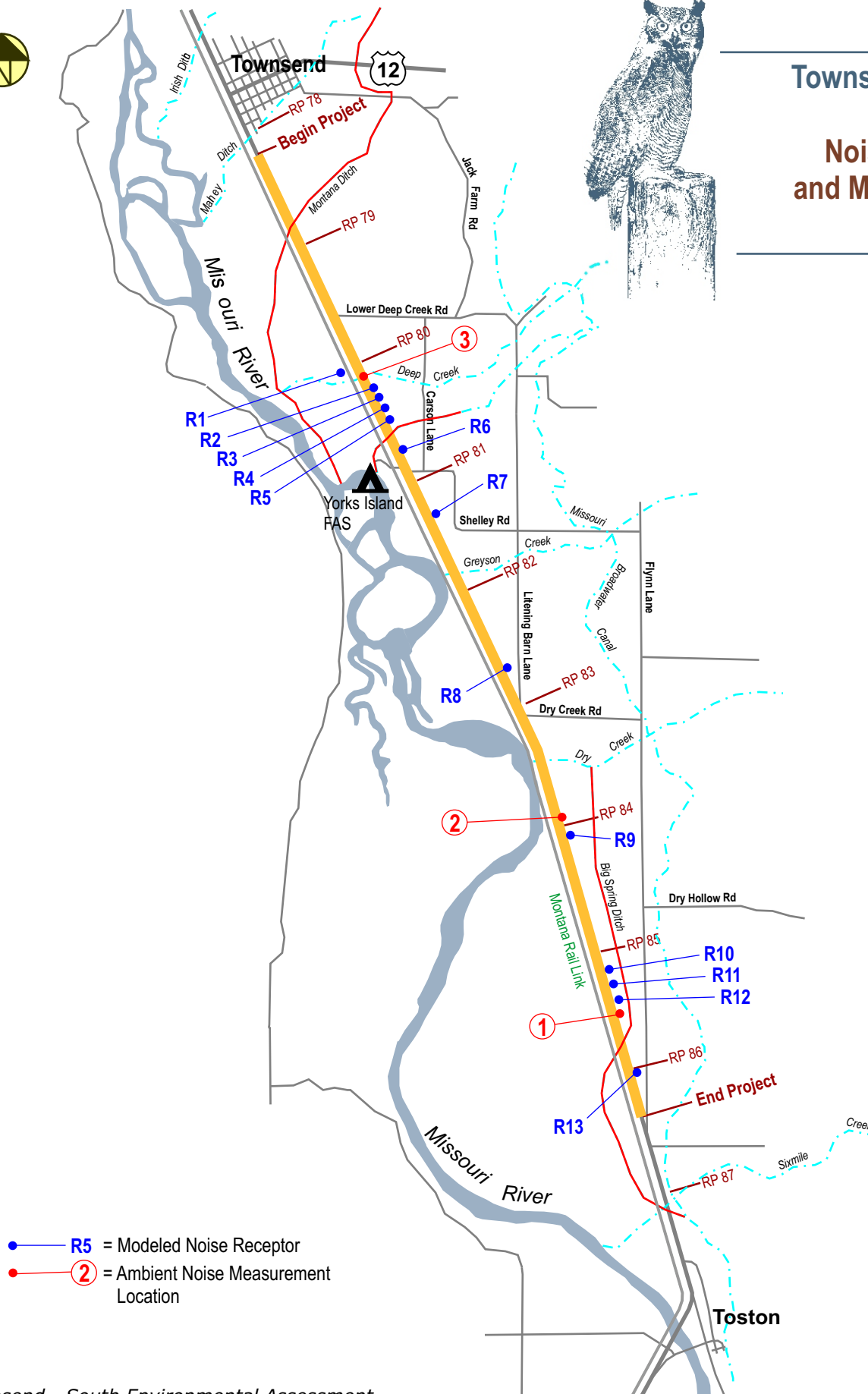
A total of 13 noise receptor locations were identified for the Townsend-South project noise study. These receptors, consisting of noise-sensitive land uses, are scattered rural residences that fall within Activity Category B according to the NAC. Commercial establishments and other developed land uses fall under NAC Activity Category C. While commercial properties exist within the project limits at the south end of Townsend, they were not included in the study because they are typically not considered noise-sensitive. Undeveloped rural lands are considered to be in Activity Category D, and the NAC does not specify an associated maximum noise level for this category.

The measurement and modeled receptor locations are shown on **FIGURE 8**.

IMPACTS OF THE PREFERRED ALTERNATIVE. Detailed noise analyses are required for Type I highway projects according to 23 CFR 772 and MDT's "Traffic Noise Analysis and Abatement: Policy and Procedure Manual" (2001). Type I projects would build a highway on a new location, physically alter the existing roadway to significantly change its horizontal or vertical alignment, or increase the number of through traffic lanes. A significant change in alignment would occur if the



Townsend - South Figure 8 Noise Receptor and Measurement Locations



horizontal distance between the highway centerline and the noise receiver was halved or if changes in the profile of the road are 6 m (20 feet) or more. The Townsend-South project is considered a Type I project due to a proposed alignment shift and the addition of new driving, passing, and turn lanes on U.S. Highway 287 near noise-sensitive receptors.

MDT's Noise Policy defines a traffic noise impact is defined as when existing or predicted noise levels approach or exceed the Noise Abatement Criteria (NAC), or when predicted noise levels substantially exceed existing levels. Approach means that design year Leq(h) noise levels are predicted to be within one dBA of the level listed for the appropriate NAC activity category. Substantially exceeding existing noise levels means that design year Leq(h) noise levels are predicted to increase by 13 dBA over existing levels.

Within the Townsend-South corridor, traffic noise impacts would occur if predicted traffic noise levels at sensitive noise receptors (rural residences) are 66 dBA or greater in the Design Year, or if the predicted noise levels in the Design Year are 13 dBA or greater than existing levels. If either criterion is met, then a traffic noise impact will occur, and traffic noise abatement measures need to be considered.

Predicted traffic noise levels for the Preferred Alternative are shown in **TABLE 4-4**. For the Preferred Alternative, the NAC for Category B activities (66 dBA) would be exceeded at two receptors (R6 and R10) in the Design Year. Predicted noise levels at Receptor R6 would exceed the NAC by 7 dBA in the Design Year. The advance acquisition of a residential property has eliminated the potential noise impact at the other corridor location (Receptor R10).

Table 4-4: Predicted Traffic Noise Levels in the Townsend-South Project Corridor

Receptor	Distance and Direction to Existing US 287 Centerline	Location	No-Build Alt. Leq(h) (dBA), Present Year (2002)	No-Build Alt. Leq(h) (dBA), Design Year (2026)	Preferred Alt. Leq(h) (dBA), Design Year (2026)
R1	71 m/233 ft west	0.1 mi. N of Deep Ck.	58	61	62
R2	97 m/318 ft east	0.1 mi. S of Deep Ck.	55	58	62
R3	101 m/331 ft east	0.2 mi. S of Deep Ck.	54	58	61
R4	96 m/315 ft east	0.3 mi. S of Deep Ck.	55	58	62
R5	101 m/331 ft east	0.3 mi. S of Deep Ck.	54	58	61
R6	30 m/98 ft east	0.3 mi. N of Shelley Rd.	65	69	73
R7	91 m/299 ft east	0.5 mi. N of Greyson Ck.	55	59	60
R8	100 m/328 ft east	0.3 mi. N of Litening Barn Lane	54	58	61
R9	79 m/259 ft east	0.5 mi. S of Dry Ck.	56	60	61
R10	24 m/79 ft east	0.7 mi. N of Big Spring Ditch	67	71	Early Acquisition
R11	67 m/220 ft east	0.5 mi. N of Big Spring Ditch	58	62	65
R12	93 m/305 ft east	0.4 mi. N of Big Spring Ditch	55	59	61
R13	104 m/341 ft east	0.4 mi. N of Flynn Lane	54	58	60

Note: Shading means Predicted traffic noise level meets or exceeds the noise impact criteria (66 dBA).

Construction-related noise effects are discussed later in this PART.

IMPACTS OF THE NO ACTION ALTERNATIVE. TABLE 4-4 also presents predicted traffic noise levels for the No Action Alternative at the established receptor locations along U.S. Highway 287. As the table shows, the predicted traffic noise levels would exceed the NAC (66 dBA) for Category B activities by 1 dBA in the Present Year (2002) at one receptor (R10). The NAC would be exceeded by 3 to 5 dBA at two of the receptors (R6 and R10) in the Design Year. This analysis shows that the NAC would be exceeded at one receptor (R6) location with or without the improvements associated with the Preferred Alternative.

According to the TNM's predicted noise levels at receptors within the Townsend-South corridor, traffic noise impacts are occurring at a few receptors and would continue to occur with the No Action Alternative. Since the travel lanes would be no nearer to these rural residences, the increase in future traffic on the route would be the reason for predicted increases in noise at these locations.

The operation of heavy equipment needed for maintenance of U.S. Highway 287 could generate noise potentially noticeable to highway users or those within close proximity to maintenance work zones.

MITIGATING MEASURES. When traffic noise impacts are predicted, possible abatement measures for the mitigation of highway traffic noise must be considered. Possible abatement measures include modifying the road design associated with the Preferred Alternative, constructing noise barriers or berms, and implementing traffic management measures, such as reducing the speed limit on the road or restricting the access of certain vehicle types.

According to MDT's *Traffic Noise Analysis and Abatement: Policy and Guidance*, abatement measures must be reasonable and feasible, and criteria are presented to help determine if a measure should be considered for noise mitigation. Barriers or berms must provide a minimum reduction in noise levels of 6 dBA to be considered feasible.

Possible noise abatement measures for the Townsend-South project corridor are described below.

- **Design Modifications.** Shifting the alignment of the proposed new highway may be a way to provide noise abatement. If a minimum distance of approximately 60 meters (197 feet) for receptors located along U.S. Highway 287 could be provided between the centerline of the new road and the receptor, then traffic noise impacts could be avoided. However, in this instance, alignment shifts are not reasonable or feasible due to a variety of other factors, such as the relocation or take of receptors,

the additional cost of right-of-way acquisition, impacts to wetlands, the location of the railroad of-way acquisition, impacts to wetlands, the location of the railroad tracks, or impacts to irrigation features within the corridor.

- **Barriers and Berms.** A barrier is most effective when it is continuous and blocks the direct line-of-sight between the roadway and the noise receptor. Driveways and access roads from many of the noise-impacted properties to U.S. Highway 287 would limit the location and ability to provide a continuous barrier or berm and it is unlikely that a 6-dBA reduction in noise levels could be achieved. A berm provided between the road and impacted receptors would also require additional right-of-way width and its construction would likely cause negative impacts to adjacent land uses and sensitive natural features in the corridor like wetlands.
- **Traffic Management.** Reducing the speed limit by 8 to 16 km/h (5 to 10 mph) on the road could reduce traffic noise levels by about 1 dBA. Even if a 1-dBA reduction were possible, traffic noise impacts would remain at Receptors R6 and R10.

Restricting certain vehicle types, like trucks, from the road, and limiting the time of day that certain vehicles may use the road could help reduce the noise levels. However, limiting truck traffic on U.S. Highway 287 is not a feasible mitigation measure since the road is a Rural Principal Arterial, and it would limit access by trucks to the agricultural properties along the road. The route is also part of the National Highway System (NHS) that provides efficient transportation routes for commercial transport. Domestic and international freight carriers would be inhibited through restrictions on vehicle types on U.S. Highway 287.

- **Pavement.** Studies have shown that open-graded asphalt or rubberized asphalt can reduce traffic noise in comparison to Portland cement and dense-graded asphalt. However, the noise reduction benefits decline as the surface ages, and therefore, the predicted levels in the Design Year may not significantly be reduced unless the roadway was regularly resurfaced with the same material. In addition, such pavement types may not withstand winter freeze/thaw conditions and snow-removal compared to dense-graded asphalt, and therefore, may be a safety hazard. At this time, MDT is investigating the feasibility of using quieter pavements, but such material may not be considered reasonable due to increased maintenance costs and durability issues.

Based on the above discussions, none of these noise abatement measures are considered to be reasonable or feasible actions to implement with the proposed Townsend-South project.

Please note that the provisions for mitigation contained in MDT's 2001 Noise Policy are not considered when establishing property values for purposes of just compensation.

4.3.7 HAZARDOUS SUBSTANCES

EXISTING CONDITIONS. Hazardous materials are products or wastes regulated by the U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) or the MDEQ. These include substances regulated under the *COMPREHENSIVE EMERGENCY RESPONSE, COMPENSATION, AND LIABILITY ACT* (CERCLA of Superfund), the *RESOURCE CONSERVATION AND RECOVERY ACT* (RCRA), and regulations for solid waste management, above-ground storage tanks (ASTs) and underground storage tanks (USTs).

No National Priority List (NPL) or Superfund sites identified by the EPA are located in or near the Townsend-South project area. Although two CECRA Priority Sites (Kenison Pole Plant and Townsend Post and Pole) exist in Townsend, the sites are not within or near the corridor where highway reconstruction would occur.

MDEQ's statewide database of all UST registered with the agency identified seven facility locations within the general vicinity of the Townsend-South project. None of the registered UST sites are listed with active tanks.

The MDEQ's Petroleum Release Section maintains a statewide database of all storage tank releases that have been reported since 1986. MDEQ's database of LUST sites identified three facilities near the project area where leaks have been reported. The most recent confirmed release date occurred some ten years ago and none of these sites are listed as active by MDEQ.

IMPACTS OF THE PREFERRED ALTERNATIVE. Based on a review of the potential sources of hazardous waste in the project area and an evaluation of records for known hazardous waste sites and concerns, it was concluded the proposed project would not affect any hazardous waste sites or encounter any areas of known contamination.

The only other known sources of hazardous wastes for the proposed project associated with the equipment used for construction of the new roadway and its related features. These are the fuels, lubricants, hydraulic fluids, and related items needed for construction vehicles and equipment. A minor risk of the release of these hazardous fluids exists since vehicles and heavy equipment would be operating within the project area throughout the construction period.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would have no impacts on hazardous waste sites, generators, or substances. A slight risk for the release of hazardous fluids exists since MDT would operate trucks and other heavy equipment during the performance of required road maintenance activities.

MITIGATION MEASURES. The following measures will be implemented to minimize hazardous waste impacts of the proposed project:

- *In accordance with MDT's Standard Specifications, the contractor for the project will be required to store fuel and other hazardous materials away from surface waters and wetlands to reduce the potential adverse effects of an accidental spill.*
- *The contractor for the project will be required to plan for and implement containment procedures in response to any accidental spills of fuel or other hazardous materials.*

4.3.8 CULTURAL RESOURCES

EXISTING CONDITIONS. Cultural resources are protected by the *NATIONAL HISTORIC PRESERVATION ACT OF 1966*, as amended (**16 U.S.C. 470 et seq.**). This law and its implementing regulations require the identification and evaluation of significant historical resources that a project may impact. It further requires that resources so identified be avoided, if possible, or when avoidance is not possible, that any adverse effects of the project on the resources be mitigated. Coordination is also required with the MONTANA STATE HISTORIC PRESERVATION OFFICE (SHPO) and the ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP).

In 1995, Renewable Technologies Inc., completed a cultural resource survey for MDT's Townsend-Urban and Townsend-Toston projects. The area addressed in the 1995 cultural resources survey included the entire Townsend-South project corridor. Due to the time that had elapsed since the original survey and the fact that the Townsend-Toston project was replaced by the present Townsend-South project, MDT decided to update the existing cultural resources survey.

During 2003, Aaberg Cultural Resources Consulting Service was retained to review previous cultural resources investigations and recommendations and to evaluate several archaeological sites within the corridor, including the purported site of a tipi ring that was identified by a local resident during a previous public meeting on this project. The updated cultural resources report was completed in July 2003. The cultural resources report identified nine previously recorded sites in the project area including seven historic sites and two archaeological sites. Included among the nine sites are two farms, a newly recorded historic home, a historic railroad line, three historic irrigation ditches or systems, and two prehistoric sites.

TABLE 4-5 lists previously recorded sites and newly recorded cultural sites within Townsend-South project corridor and presents their *National Register of Historic Places* (NRHP) eligibility status. The general locations of these sites are shown on **FIGURE 9**.

Three highway bridges within the Townsend-South corridor were not evaluated in RTI's 1995 cultural resource report. The existing concrete bridges over the Montana Ditch (RP 78.9), Deep Creek (RP 80.0), and the Deep Creek Overflow (RP 80.6) are over 50 years old. In accordance with MDT's recently modified historic roads and bridges Programmatic Agreement with the FHWA, the Montana SHPO, and the ACHP, determinations of NHRP eligibility were made for each structure. Based on a recent evaluation of these historic age bridges, MDT concluded the Montana Ditch and Deep Creek Overflow bridges are NHRP-eligible since these structures are excellent examples of 1930's concrete slab bridges.

U.S. Highway 287 crosses the Montana Ditch, an overflow channel associated with the East Side Canal of the Broadwater-Missouri Diversion Project, and the Big Springs Ditch. MDT determined these historic irrigation features to be NRHP-eligible.

Table 4-5: Cultural Resources–Townsend-South Corridor

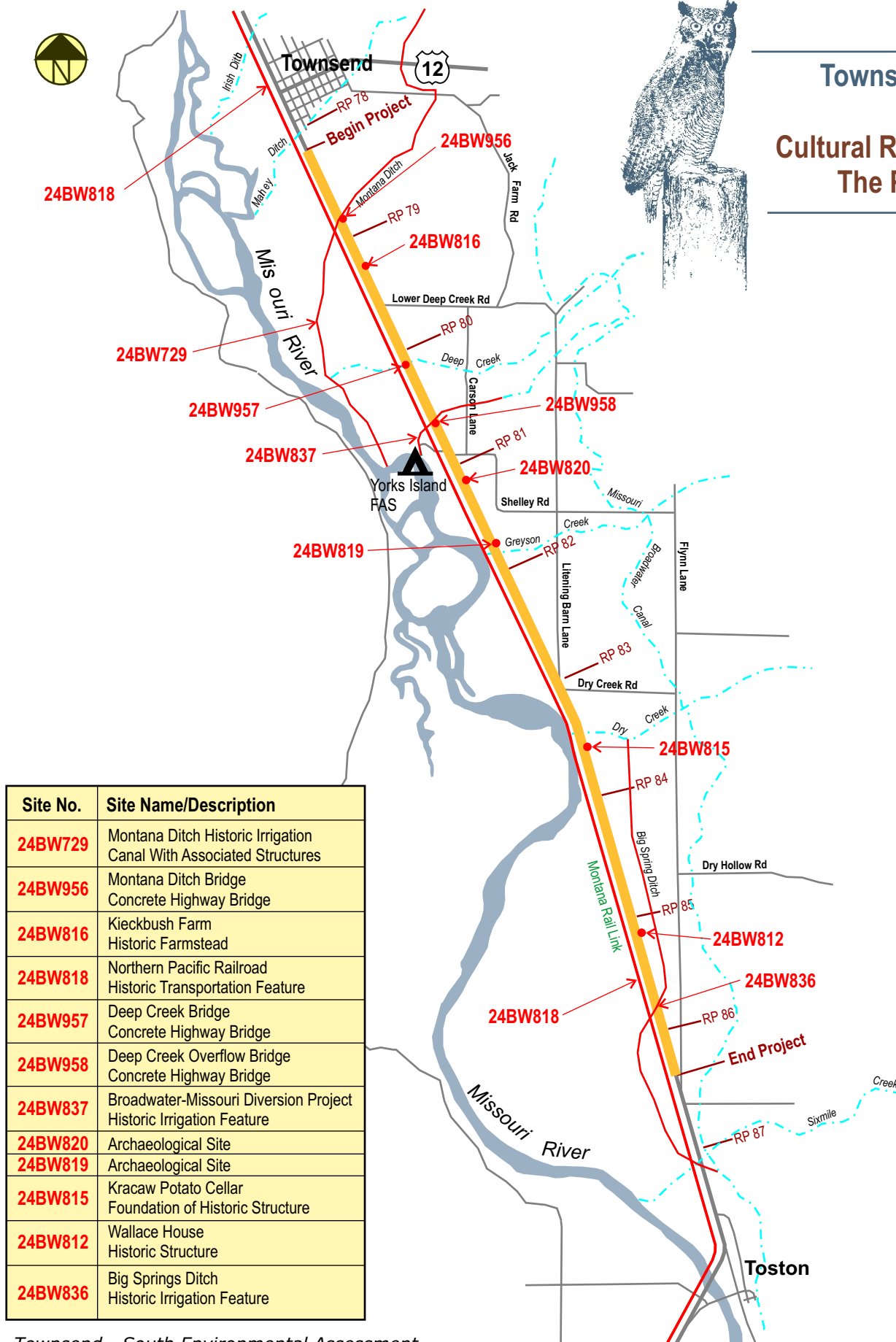
Site Number	Site Name/Description	Approximate Reference Post (RP)	Location	NHRP Eligibility Status
24BW729	Montana Ditch Historic irrigation canal with associated structures	Various RP 78.9	Sec. 5, T6N, R2E highway crossing	Eligible
24BW956	Montana Ditch Bridge Concrete highway bridge	RP 78.9	Sec. 5, T6N, R2E	Eligible
24BW0816	Kieckbush Farm Historic farmstead	RP 79.4	Sec. 8, T6N, R2E	Eligible (Feature 2 only)
24BW0818	Northern Pacific Railroad Historic transportation feature	Various	Parallels U.S. Highway 287 in corridor	Eligible
24BW957	Deep Creek Bridge Concrete highway bridge	RP 80.0	Sec. 8, T6N, R2E	Not Eligible
24BW958	Deep Creek Overflow Bridge Concrete highway bridge	RP 80.6	Sec. 16, T6N, R2E	Eligible
24BW837	Broadwater-Missouri Diversion Project Historic irrigation feature	RP 80.6	Sec. 17, T6N, R2E highway crossing of overflow channel for East Side Canal	Eligible
24BW0820	Archaeological site	RP 81.1	Sec. 16, T6N, R2E	Not Eligible
24BW0819	Archaeological site	RP 81.9	Sec. 21, T6N, R2E	Not Eligible
24BW0815	Kracaw Potato Cellar Foundation of historic structure	RP 83.6	Sec. 34, T6N, R2E	Not Eligible
24BW0812	Wallace House Historic structure	RP 85.2	Sec. 3, T5N, R2E	Eligible
24BW836	Big Springs Ditch Historic irrigation feature	Various RP 85.8	Sec. 10, T6N, R2E highway crossing	Eligible

SHPO was contacted for concurrence with NRHP eligibility determinations for cultural sites recorded in the Townsend-South project area. SHPO concurred with the NRHP eligibility determinations for these sites on July 28, 2003. The agency also concurred with the NRHP eligibility determinations for the three historic age highway bridges in the project area on April 21, 2004. Copies of MDT's letters to SHPO regarding NRHP-eligibility determinations for cultural sites in the project area with the agency's concurrence stamp can be found in **APPENDIX B.**

Townsend - South

Figure 9

Cultural Resources In The Project Area



IMPACTS OF THE PREFERRED ALTERNATIVE. Two sites within the project area, the Northern Pacific Railroad (24BW0818) and the Wallace House (24BW0812) were determined eligible for the NRHP. Additionally, one structure on the Kieckbush Farm (24BW816) was determined NRHP-eligible. The Montana Ditch bridge (24BW956) and Deep Creek Overflow bridge (24BW958) were also determined NHRP-eligible.

The Northern Pacific Railroad line (24BW0818) consists of a 13.2 km (8.2 mile) long segment of the former Northern Pacific Railroad's Main Line. The Northern Pacific Railroad's Main Line in Montana is NRHP-eligible. In the project area, the rail line is parallel to U.S. Highway 287 and located about 48 m (160 feet) west of the highway. Since its original construction in 1883, the rail line has remained active and is currently used and maintained by Montana Rail Link.

The Preferred Alternative would not remove or alter historic features associated with the Northern Pacific Railroad Main Line (24BW0818) since the proposed highway widening would occur to the east side of the current roadway. Although the new road would be no closer to the railroad line than at present, the new right-of-way required for the highway would encroach on the existing right-of-way corridor for the railroad. Over most of the project, these encroachments would typically range from 1 to 4 m (about 3 to 13 feet) and may be as much as 8 m (26 feet) at some isolated locations. In April 2004, a Determination of Effect that concluded the Preferred Alternative would have **no effect** to the Northern Pacific Railroad line was submitted to SHPO. The agency concurred with this determination on April 21, 2004.

The Kieckbush Farm site (24BW816) consists of a barn, two homestead shacks, and other associated features. Feature 2 is a clapboard-sided house dating to the 1920s. The barn at the site does not qualify for the National Register because it was moved to the property in the mid-1950s and other structures and features of the site no longer retain their integrity. In August 2003, MDT submitted a Determination of Effect for the Townsend-South project's potential impacts to Feature 2 of 24BW816. The determination concluded the Preferred Alternative would have **no effect** to the Feature 2 of the Kieckbush Farm. SHPO concurred with this determination on August 14, 2003.

The Wallace House site (24BW0812) consists of a house with attached garage and two sheds surrounded by a shelterbelt. The house and garage, built around 1947, are good examples of residential architecture in the post-World War II period. The reconstruction of U.S Highway 287 in the vicinity of the Wallace House would provide a four-lane roadway with improved roadside slopes. New right-of-way would be acquired from the property containing the Wallace House. Structures on the site would not be affected but several trees within the shelterbelt between the house and the highway would be removed. The Preferred Alternative would also reconstruct the driveway approach to the Wallace House. The proposed improvements

would not affect any features that make the Wallace Site eligible for the NRHP or substantially change the setting of the property. In April 2004, MDT submitted a Determination of Effect that concluded the Preferred Alternative would have **no adverse effect** to the Wallace House. SHPO concurred with this determination on April 21, 2004.

The proposed highway reconstruction would require the removal of reinforced concrete slab bridges located at the Montana Ditch, and the Deep Creek Overflow crossings and a reinforced concrete T-beam bridge at the Deep Creek crossing. These structures were originally built in 1931 and reconstructed in 1939. Only the Montana Ditch and Deep Creek Overflow bridges were determined NHRP-eligible.

Since the Preferred Alternative would be constructed on or near the existing alignment of U.S. Highway 287, the bridges over the Montana Ditch, Deep Creek and the Deep Creek Overflow would be removed and replaced with new bridges, box culverts or pipes. These structures do not represent unique examples of reinforced concrete highway bridges in Montana. The 1997 Programmatic Agreement regarding historic roads and bridges was enacted in lieu of regular procedures for compliance with *Section 106* of the *NATIONAL HISTORIC PRESERVATION ACT* (**16 U.S.C. 470 f**) as applied only to historic roads and bridges in Montana. MDT has complied with *Section 106* for these historic bridges by following the procedures required by the Programmatic Agreement.

Reconstruction of U.S. Highway 287 would affect historic irrigation features where the new road would cross the Montana Ditch (24BW0729), the overflow channel associated with the East Side Canal of the Broadwater-Missouri Diversion Project (24BW0837), and the Big Springs Ditch (24BW0836). These crossings would require the installation of new metal or concrete culverts beneath the road at each location where the new highway crosses the irrigation ditches. Minor revisions to the alignment of the canal adjacent to the roadway would be required at the Big Springs Ditch crossing. MDT, through consultation with SHPO, determined that the proposed highway reconstruction would have no adverse effect to these historic irrigation features. SHPO concurred with this determination on April 18, 2005.

Copies of pertinent correspondence between MDT and SHPO regarding the potential effects of highway reconstruction on NHRP-eligible sites in the Townsend-South project can be found in **APPENDIX B**.

Federally funded actions affecting historic sites that are on, or considered as eligible for the NRHP also must comply with *Section 4(f)* of the *U.S. Department of Transportation Act* of 1966, as amended (**49 U.S.C. 303**). This compliance is discussed later in this PART.

IMPACTS OF THE NO ACTION ALTERNATIVE. The No Action Alternative would not result in any further effects on the cultural resources in the Townsend-South project area.

MITIGATING MEASURES. The following measure will be implemented to minimize potential impacts on cultural resources due to implementation of the proposed project:

- *If significant unanticipated cultural materials are encountered during construction, MDT will require the contractor(s) to temporarily suspend work in the immediate vicinity of the find until the cultural materials can be assessed.*

4.3.9 SECTION 4(f) RESOURCES

EXISTING CONDITIONS. *Section 4(f) of the U.S. DEPARTMENT OF TRANSPORTATION ACT, as amended (49 U.S.C. 303), applies to Federally-funded transportation actions that affect sites on or eligible for the NRHP, publicly-owned parks, recreation lands, and wildlife and waterfowl refuges.*

There are no public parks, public recreation sites, or wildlife or waterfowl refuges within the area that would be affected by the proposed action. York's Islands Fishing Access Site, a 6.6 ha (16.34 acre) public recreation site administered by the MDFWP, is accessible from U.S. Highway 287 in the Townsend-South corridor. However, the fishing access site property is located between the Missouri River and the Montana Rail Link railroad line and would not be affected by the proposed highway reconstruction.

The Northern Pacific Railroad (24BW0818), one structure at the Kieckbush Farm (24BW816), and the Wallace House site (24BW0812) are eligible for the NRHP and potential effects to these sites must be reviewed to assess whether *Section 4(f)* applies. Additionally, the Montana Ditch (24BW0729), the Broadwater-Missouri Diversion Project (24BW0837), the Big Springs Ditch (24BW0836) and three reinforced concrete highway bridges in the corridor are subject to *Section 4(f)*.

IMPACTS OF THE PREFERRED ALTERNATIVE. Impacts to *Section 4(f)* resources must be avoided whenever feasible. If it can be shown that no other feasible and prudent alternatives exist and such resources cannot be avoided, then all possible planning must be implemented to minimize harm to *4(f)* resources.

Impacts to *Section 4(f)* resources include both the direct and indirect "use" of property from a publicly owned public park, recreation area, wildlife refuge, and waterfowl refuge or historic site. A direct use (or taking) occurs when land from a *4(f)* site is acquired for a transportation project or when the occupancy of land within the site is considered adverse. An indirect use (or constructive use) of *Section 4(f)* resources can occur when the

proximity impacts of the transportation project are so great that the function or use of the site is substantially impaired. When a project uses land protected by *Section 4(f)*, a separate *4(f)* evaluation must be prepared.

The Preferred Alternative would impact existing historic sites, irrigation ditches, and highway bridges within the Townsend-South project corridor in the same manner as previously described under **4.3.8. Cultural Resources**.

In 1983, the FHWA developed a Nationwide *Section 4(f)* Evaluation form for projects requiring minor uses of land from historic sites. Copies of completed Nationwide Programmatic *Section 4(f)* Evaluation forms for this project's potential effects to the Wallace House, irrigation ditches, and highway bridges within the Townsend-South corridor can be found in **APPENDIX C**. The forms programmatically demonstrate compliance with the provisions of *Section 4(f)*. Evaluation forms were not prepared for the Northern Pacific Railroad (24BW0818) or the Kieckbush Farm (24BW816) since the Preferred Alternative would have no effect to these sites.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would not affect sites on or eligible for the NRHP, publicly owned parks, recreation lands, or wildlife and waterfowl refuges.

MITIGATING MEASURES. The Nationwide Programmatic *Section 4(f)* Evaluation forms for the historic sites, irrigation ditches, and highway bridges affected by the proposed reconstruction of U.S. Highway 287 found in **APPENDIX C** discuss measures to minimize harm to these properties.

4.3.10 SECTION 6(f) LANDS

Section 6(f) of the *NATIONAL LAND & WATER CONSERVATION FUND ACT (16 U.S.C. 460)* requires that coordination be done to determine if federal funds were used to acquire or improve any lands in the project area for recreation or water conservation purposes.

The MDFWP, the agency that administers the Land and Water Conservation Fund (LWCF) in Montana, was contacted to identify sites in the Townsend-South project area where federal monies were used to acquire or develop public recreation facilities. According to correspondence received from the agency in 1991, the York's Islands Fishing Access Site (FAS), formerly known as the Deepdale FAS, has LWCF involvement and qualifies as a *Section 6(f)* site.

IMPACTS OF THE PREFERRED ALTERNATIVE. The proposed improvements to U.S. Highway 287 would not require any land from or otherwise affect the property associated with the York's Islands FAS. The approach used to access the FAS from the highway would be impacted by road reconstruction; however, this work would occur within the existing right-of-way

corridor for U.S. Highway 287. The Preferred Alternative would impact advance signing for the public recreation area located adjacent to the existing highway.

IMPACTS OF THE NO ACTION ALTERNATIVE. This alternative would not affect the York's Islands FAS property, the highway approach used to access the site, or advance signing for the recreation area.

MITIGATING MEASURES. The following measures will be implemented to mitigate temporary, construction-related impacts to York's Islands FAS:

- *Public access to the FAS from U.S. Highway 287 will be perpetuated throughout the construction period.*
- *MDT will reset existing signs for the FAS located adjacent to the highway if affected by the proposed reconstruction project.*

4.3.11 PEDESTRIAN AND BICYCLIST CONSIDERATIONS

EXISTING CONDITIONS. Although counts are not available to quantify such use, this section of U.S. Highway 287 receives only limited use by pedestrians and bicyclists. Most pedestrian and bicyclist activity would be expected to occur within or near Townsend, not within the rural project corridor. The existing highway has a paved surface only 9.1 m (30 feet) wide so bicyclists must use the road's 0.9 m (3-foot) paved shoulder for travel. Pedestrians must also use the road's paved shoulder or unpaved roadside slopes for walking along the highway.

IMPACTS OF THE PREFERRED ALTERNATIVE. The Preferred Alternative would provide wider road shoulders for use by pedestrians and bicyclists and improve safety for these facility users. The proposed road would be constructed with 2.4 m (8 foot) wide shoulders to replace the narrow 0.9 m (3 foot) wide shoulders that presently exist along U.S. Highway 287 through the project area. The shoulders for the new road would incorporate a 0.3 m (1 foot) wide rumble strip reducing the unobstructed paved shoulder width for bicycle travel to about 2.1 m (7 feet).

IMPACTS OF THE NO ACTION ALTERNATIVE. There would be no change in the facilities available for bicyclists or pedestrians with the No Action Alternative. These highway users would be required to continue using the narrow paved road shoulder or roadside slopes for travel along and through the project area. Safety for pedestrians and bicyclists would decline as traffic volumes increase on the route.

MITIGATING MEASURES. No mitigating measures are required or proposed.

4.3.12 VISUAL RESOURCES

EXISTING CONDITIONS. The project area is situated in flat to gently rolling terrain within the Missouri River valley. Lands adjacent to the highway are covered with common grasses, sagebrush, sweet clover and prickly pear. Riparian areas are scattered throughout the project area and numerous wetlands exist with areas of open water, willows, and cattails adjacent to the roadway. The dominant man-made features in the project area are: the existing road and its associated features; intersecting roads and driveways; fencing; commercial buildings and landscaping at the south edge of Townsend; scattered residences and farmsteads along the highway; overhead utilities including a large electrical transmission line and towers; pivot irrigation systems and cultivated agricultural land.

Background landscapes visible from the highway corridor are dominated by the foothills and uplands of the Big Belt Mountain Range (Mt. Baldy and Mt. Edith being the most visible peaks) to the north and east; the Limestone Hills and Elkhorn Mountains to the west; and distant peaks in the Tobacco Root Mountains to the southwest. Foreground landscapes in the Townsend-South corridor consist primarily of the rolling hills and agricultural lands adjacent to the road, the Missouri River and its tributaries with associated riparian areas, scattered development along the highway, and the Montana Rail Link railroad line.

Those who view the existing roadway and who would see the reconstructed transportation facilities in the project area include permanent residents, motorists on U.S. Highway 287, and operators of Montana Rail Link trains on the railroad line that parallels the highway.

IMPACTS OF THE PREFERRED ALTERNATIVE. The Preferred Alternative would not change views of the background landscapes along U.S. Highway 287 south of Townsend. However, this alternative would cause minor changes to the foreground landscape due to the increased width of the new roadway, a slight easterly shift in the road's location, and revised roadside slopes.

The existing 9.1 m (30-foot) wide road would be replaced by a new two-lane highway at least 12 m (40 feet) wide with wider paved shoulders and flatter roadside slopes for about half the corridor's length. Throughout the remainder of the corridor, the new road would include auxiliary turn lanes, at least one and as many as three four-lane passing sections, wider paved shoulders, and flatter roadside slopes. The paved roadway would be 22.8 m (76 feet) wide in four-lane passing segments with left turn lanes. Corridor residents and frequent highway users would notice the increased width of the new roadway and recognize that the right-of-way and clear zone areas would be considerably wider than those associated with the existing facility.

North of Dry Creek (between RPs 82 and 83), road widening would encroach on several large wetland areas adjacent to the road with open water. Due to the proposed easterly alignment shift, fill would be placed in portions of these wetlands. The appearance of these wetlands would be changed from existing conditions. It is expected that over time, these roadside wetlands would take on an appearance similar to the existing condition.

The new roadway would be closer to several residences located east of the highway as a result of an alignment shift. Some trees from windbreaks near a few residences and along streams or irrigation ditches would be lost due to road widening. Other permanent visual changes within the project area within the Townsend-South corridor would include revisions to major road intersections and roadway approaches.

The Preferred Alternative would not change the visual relationship between the highway and Montana Rail Link Railroad through the corridor. The offset distance between the western edge of the highway and the railroad would be unchanged.

The Preferred Alternative would cause minor, short-term visual impacts during the construction period. Visual changes during construction would include: surface disturbances and clearing until revegetation occurs; temporary sign installations; the storage of excavated material, equipment, and material; and dust and debris from construction activities.

IMPACTS OF THE NO ACTION ALTERNATIVE. There would be no change in the visual appearance of the project area due to continued highway maintenance actions by MDT.

MITIGATION MEASURES. The following measures will be incorporated with the proposed Townsend-South project to offset potential visual impacts:

- *Areas disturbed within the MDT Right-of-Way or construction easements will be reseeded as quickly as practicable after construction.*

4.3.13 CONSTRUCTION IMPACTS

Road reconstruction activities associated with the Preferred Alternative would cause temporary inconveniences to the traveling public and to local residents. These inconveniences may include slightly longer travel times, minor detours around work zones, and the noise and dust generated by construction equipment. These impacts could be expected to occur at various times throughout two-year-long period required to construct the proposed highway improvements and its associated features.

Typical impacts associated with the construction are described in more detail below:

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- **Traffic Disruptions, Delays, and Detours.** The proposed project would be built “under traffic” meaning that travel through work zones would be allowed during construction. Traffic inconveniences will be most frequent during the first construction season when the foundation for the new road and new drainage facilities are installed.

MDT will prepare a traffic control plan to ensure that traffic flows through the project area are maintained in a safe and efficient manner and that access to adjacent businesses, residences, and agricultural lands is provided during the construction period. The traffic control plan may require the use of temporary detours, occasional delays, and the use of flaggers or pilot cars to guide traffic through work zones.

- **Noise and Vibration.** The operations of heavy machinery like earth moving equipment, paving equipment, power tools, and trucks would create periods of undesirable noise in the project area. Noise due to construction activities would produce short-term impacts for residents and business owners near the highway. Construction-related noise may also temporarily displace some wildlife and bird species from the area or deter such species from using habitats in the vicinity of the roadway.
- **Dust.** The operation of heavy equipment on disturbed areas and gravel crushing activities could produce dust.
- **Water Quality.** Runoff from disturbed surface areas has a minor potential to enter surface waters and adversely affect water quality. Petroleum products and other materials could be spilled during the operation and maintenance of equipment needed to build the new highway facilities.

Waste Materials. The reconstruction of U.S. Highway 287 will produce a variety of waste materials associated with the old highway including: old asphalt, culverts, guardrail, and concrete removed from three existing bridges in the project area. Additionally, waste fluids associated with contractor vehicles and equipment will be produced.

- **Visual.** Stockpiles of materials (topsoil, gravel, old asphalt) and parked equipment needed for the construction of the new roadway may cause short-term adverse impacts for local residents and others passing through the project area.
- **Gravel Source and Asphalt Plant.** Substantial quantities of gravel (aggregate) must be imported for the construction of a foundation for the new road and for the preparation of asphalt surfacing. Typically, providing gravel and asphalt surfacing is the responsibility of the

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contractor for the project. A gravel source for this project has not yet been identified; however, it is assumed that the source will be identified in the general area of the Townsend-South project. The development of a gravel source site requires the contractor to obtain and follow all provisions of an Opencut Mining Permit from the MDEQ in accordance with the *OPENCUT MINING ACT* (82-4-401 et seq., MCA). The contractor must prepare a reclamation plan and submit a reclamation bond.

The contractor must also establish and operate an asphalt plant in the general project area to provide surfacing for the new road. An air quality permit from the MDEQ is required for the operation of any mineral crushing or other processing plants.

IMPACTS OF THE NO ACTION ALTERNATIVE. The only construction impacts associated with this alternative would be related to the completion of minor maintenance activities on the existing roadway and its related facilities. Maintenance actions have the potential to create minor temporary and localized impacts such as noise from equipment, delays or detours, and surface disturbances.

MITIGATION MEASURES. Construction impacts will be mitigated through the implementation and enforcement of control measures during construction such as:

- *Traffic control will be accomplished in accordance with MDT's standard practices and the Manual on Uniform Traffic Control Devices (MUTCD).*
- *If dust generated by construction activities becomes a concern, it will be controlled by the required use of either water or another approved dust suppressant.*
- *Temporary and permanent BMPs for erosion control will be employed to prevent sediments from reaching the area surface waters or wetlands. A SWPPP employing BMPs will be implemented throughout the project corridor.*
- *The contractor will be required to have a plan for implementing appropriate measures in the event of an accidental spill.*
- *All work related to the proposed Townsend-South project would be subject to the provisions included in the current edition of Standard Specifications for Road and Bridge Construction as adopted by MDT and the Montana Transportation Commission.*
- *Reasonable access to adjacent businesses and residences will be maintained during construction.*

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- *Disposal of project waste materials will be accomplished with applicable laws, rules and regulations.*

4.3.14 PERMITS REQUIRED

The No Action Alternative would not require any permits.

However, the Preferred Alternative for the proposed Townsend-South project would require a variety of permits to be obtained prior to any relevant disturbances.

Water-Related Permits. The Preferred Alternative will require the following permits to comply with various provisions of the *CLEAN WATER ACT* (33 U.S.C. 1251 - 1376):

- **Section 402/Montana Pollutant Discharge Elimination System (MPDES) Permit.** The project will require a *Section 402* Montana Pollutant Discharge Elimination System permit from the MDEQ's Permitting and Compliance Division. Accordingly, MDT will submit a Notice of Intent (NOI) Form for stormwater discharges under the MPDES "General Permit for Storm Water Discharges Associated with Construction Activity." This permitting process would serve only as a notice of intent to discharge, rather than a submittal for agency review or approval of a Storm Water Pollution Prevention Plan (SWPPP).
- **Section 318 Authorization.** In accordance with 75-5-318, MCA, a Section 318 Authorization for short-term turbidity may be required from the MDEQ Permitting and Compliance Division.

Section 404 Permit. A *Section 404* permit from the COE will be required for the placement of fill or excavation in delineated jurisdictional wetlands and "Waters of the US" associated with the installation of new replacement culverts. The COE will determine if this proposed project requires an "Individual" permit or qualifies for a "Nationwide" permit under the provisions of 30 CFR 330. Preliminary correspondence from the COE (September 9, 2003) suggests that an Individual Permit may be required due to the anticipated project impacts to jurisdictional wetlands and Waters of the U.S. The Individual Permit process typically requires 120 days or more to complete following the submittal of a complete 404 permit application.

- **Section 401 Water Quality Certification.** Under *Section 401*, states can review and approve, condition, or deny all Federal permits or licenses that might result in a discharge to State waters, including wetlands. The MDEQ must provide a Section 401 Water Quality Certification if this project requires an Individual Permit from the COE.

Other water-related permits required for the Townsend-South project include:

- **124SPA Permit.** A **124SPA** Permit as required under the *Montana Stream Protection Act* is necessary for a new culvert installations and related work in Deep Creek, Deep Creek Overflow, Greyson Creek, and Dry Creek.

All work would also be in accordance with the *WATER QUALITY ACT OF 1987 (P.L. 100-4)*, as amended.

Floodplain Development Permit. A Floodplain Development Permit would be required from Broadwater County for the proposed work in the delineated floodplains of the Missouri River, Deep Creek, and Greyson Creek.

Other Likely Permits. Several other permits associated with construction activities may be required for this proposed project. These permits are identified below:

- **Opencut Mining Permit.** The development of a gravel source site requires the contractor to obtain and follow all provisions of an Opencut Mining Permit from the MDEQ in accordance with the *OPENCUT MINING ACT (82-4-401 et seq., MCA)*.
- **Air Quality Permit.** An air quality permit from the MDEQ Air Resources Management Bureau is required for the operation of any mineral crushing or asphalt processing plants.

4.4 INDIRECT (SECONDARY) EFFECTS

Indirect (secondary) effects are those caused by the proposed highway reconstruction project but that occur at a different time and/or place. Transportation improvements often have the potential to induce growth and change patterns of land use, population density or growth rates, social and economic conditions, accessibility, traffic volumes, noise levels. Such induced changes may in turn affect air and water quality and other natural systems.

The indirect effects associated with the Townsend-South project are expected to be minor and several indirect effects may be beneficial. This conclusion was made because the primary purpose of the proposed project is to make design changes to an existing roadway to increase its safety and improve its capacity. The resulting facility would make travel on U.S. Highway 287 safer, more efficient, and more convenient for area residents and other highway users.

Other minor indirect impacts that could occur as a result of this project include:

- Road widening would increase in the amount of impervious surface area in the highway corridor. As a result, groundwater infiltration along the roadway would be reduced and larger quantities of runoff from the

highway would transport roadway pollutants to area drainages.

- A minor loss in property tax revenue to Broadwater County due to right-of-way acquisition for the expanded highway.
- Upgrades to utilities or minor enhancements to services in the project corridor due to utility relocations.
- Increased traffic on the highway over time and the change in road alignment would result in noise levels above the NAC at a two locations.
- The minor loss of "Important Farmland" would contribute to the continuing loss of such resources in Broadwater County.

This project is not intended to induce growth or cause land use changes. Subdivision and growth of rural lands in Broadwater County, like many areas of western Montana, is on the increase and expected to continue. Rural areas of Broadwater County grew by 32 percent over the 1990-2000 period, making the County one of the state's top three growth counties trailing only Ravalli County and adjoining Gallatin County. Over the same period, the City of Townsend grew by 14 percent. According to the "Broadwater County Growth Policy Plan and Comprehensive Economic Development Strategy," similar growth is anticipated over the next ten years in the County.

Although growth has occurred in the County and is expected to continue, such growth has generally taken place in areas north of Townsend (near the Lewis and Clark County line, north of Winston, and in the Silos area) and near the junction of U.S. Highway 287 and I-90. New development and population growth has generally not occurred in the Townsend-South project area since much of the area is comprised of agricultural lands held by a relatively small number of owners.

The proposed Townsend-South project may indirectly contribute to further growth and development in rural Broadwater County. While this is a possibility, there are too many other factors that promote growth to accurately predict that if or when substantial new growth would occur in the project area. The factors include items such as the general economy, land prices, tax levels and the existence of services and infrastructure. The *Broadwater County Growth Policy Plan and Comprehensive Economic Development Strategy* attempts to discourage new development in areas with irrigated and productive agricultural lands (like the project corridor) in favor already areas with existing infrastructure and services or where infrastructure and services can be readily extended.

Any potential indirect impacts would be tempered somewhat by the fact that U.S. Highway 287 would be improved on or near its existing alignment and with relatively limited modifications.

Reconstructing the road would not substantially change the character of the much of the project area or cause current property owners and developers to build faster or any differently than they would have without the proposed highway improvements. The proposed action would not make any lands in project area accessible for the first time for development activities.

4.5 CUMULATIVE IMPACTS

Cumulative impacts are those effects that result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions regardless of what agency (federal or non-federal) undertakes such actions. In order to help evaluate possible cumulative effects, research was conducted to identify other known or planned projects in the vicinity of the Townsend-South corridor.

Recently completed, ongoing, and reasonably foreseeable projects by MDT and others are described in the following paragraphs.

4.5.1 RECENTLY COMPLETED PROJECTS ON U.S. HIGHWAY 12/287

The following projects on U.S. Highway 12/287 between Helena and the West Three Forks interchange on I-90 or on U.S. Highway 12 near Townsend were recently completed.

- **US 287 Passing Lane - Baum Road** - Passing Lane Addition on U.S. Highway 12/287 finished in 2003.
- **US 287 Passing Lane - N of Silos** - Passing Lane Addition on U.S. Highway 12/287 finished in 2003.
- **Winston North & South** - Seal and Cover project on U.S. Highway 12/287 let and finished in 2002.
- **2 km S of Winston-South** - Widen, Seal and Cover project on U.S. Highway 12/287 let and finished in 2003.
- **Townsend-East** - Pavement preservation project on U.S. Highway 12 immediately east of Townsend let and finished in 2004.
- **Deep Creek Canyon** - Pavement preservation project on U.S. Highway 12 through Deep Creek Canyon east of Townsend let and finished in 2004.

4.5.2 ONGOING AND PLANNED PROJECTS ON U.S. HIGHWAY 12/287

MDT currently has one active and three planned projects on U.S. Highway 12/287 between Helena and the West Three Forks interchange on I-90, not including the proposed Townsend-South project.

These projects are identified and briefly described below:

- **Helena-East Helena; NH 8-2(59) 46; Control No. 4820.** This proposed project would mill the surface and replace the median and shoulder paving on a portion of U.S. Highway 12/287 between Helena and East Helena. The proposed project is located about 51 km (32 miles) north of the Townsend-South project area. The planned date for implementation is during Fiscal Year 2005.
- **US 287 Passing Lane - S of Toston; NH 8-4(41) 58; Control No. 3777.** This active project will provide a four-lane passing area by widening and resurfacing about 4.2 km (2.6 miles) of U.S. Highway 287 south of Toston. The proposed project is located about 16 km (10 miles) south of the Townsend-South project area. Construction began on this project in the summer of 2005.
- **US 287 Passing Lane - N of Three Forks; NH 8-4(32) 58; Control No. 3777.** This proposed project would provide a four-lane passing area by widening and resurfacing about 5.2 km (3.2 miles) of U.S. Highway 287 north of the west I-90 interchange near Three Forks. The proposed project is located about 32 km (20 miles) south of the Townsend-South project area. The planned date for implementation of this passing lane addition is during Fiscal Year 2006.
- **Turn Bay-W Three Forks Interchange; IM-STPHS 8-4(34) 108; Control No. 4435.** This proposed project would replace the highway bridge at West Three Forks I-90 interchange and provide turn lanes for traffic on U.S. Highway 287. The project is located about 35 km (22 miles) south of the Townsend-South project area. The planned date for implementation of this passing lane addition is during Fiscal Year 2005.

4.5.3 PLANNED PROJECTS ON U.S. HIGHWAY 12 (EAST OF TOWNSEND)

MDT currently has two planned projects on U.S. Highway 12 in the Townsend area including:

- **East of Townsend; STPP 14-1 (9) 16; Control No. 1510.** This planned project would reconstruct about 7.7 km (4.8 miles) of U.S. Highway 12 and replace an existing bridge. The project, located about 22.5 km (14 miles) northeast of the Townsend-South project, would be implemented in Fiscal Year 2005.
- **1001-Turn Bay - E of Townsend; STPHS 14-1 (12) 2; Control No. 5020.** This planned safety project to be implemented during 2007 would provide a turn bay at the U.S. Highway 12/Secondary Highway 284 intersection located about 3.2 km (2 miles) east of Townsend.

It should be noted that the availability of funding could affect the timing of implementation for these planned MDT projects.

4.5.4 REASONABLY FORESEEABLE MDT PROJECTS

The projects identified below are reasonably foreseeable MDT actions in the general vicinity of the Townsend-South project area.

- **S of Toston-South (UPN 5814).** This resurfacing project on U.S. Highway south of Toston (near RP 88) is included on MDT's list of proposed highway projects for 2005 in the Butte District.
- **N of Three Forks (UPN 5734).** This rehabilitation project on U.S. Highway near Three Forks (RP 105.4) is included on MDT's list of proposed highway projects for 2005 in the Butte District.
- **U.S. Highway 287 Reconstruction in the Toston Area.** MDT has considered other potential reconstruction projects on U.S. Highway 287 in the Toston area. Two such projects, identified for planning purposes as the "Toston-North" and "Toston-South" projects, proposed to reconstruct about 13 km (8 miles) of U.S. Highway 287 immediately south of the proposed Townsend-South project. Highway reconstruction in this area would require the replacement of highway bridges over the Missouri River and the Montana Rail Link railroad at Toston.

MDT's original Townsend-Toston project (started in the early 1990's) included the replacement of highway bridges over the Missouri River and railroad at Toston. Several alternative alignments for the river crossing were identified prior to when the project was dropped. It is likely that a project to replace the bridges would be implemented in the future. However, the current funding situation suggests that it may be ten or more years before MDT would sufficient monies to implement such a project.

The Toston-South project does not appear in MDT's *2004-2006 Final Surface Transportation Improvements Program* (STIP).

- **Four-lane Reconstruction of U.S. Highway 12/287.** Traffic volumes on the U.S. Highway 12/287 corridor between East Helena and I-90 near Three Forks have steadily increased in recent years. The highest traffic counts in the corridor occur in the East Helena area and traffic volumes generally decrease in a southerly direction within the corridor. As discussed in Part II of the EA, MDT expects traffic on this route to continue increasing at about 5 percent annually for at least the next twenty

years. With continued increases in traffic, it is conceivable that four-lane reconstruction could be proposed in the most heavily traveled section(s) of the corridor in the foreseeable future.

U.S. Highway 12/287 from East Helena to Helena has already been reconstructed as a four-lane facility. As indicated previously, the route has already been reconstructed between East Helena and Townsend to provide two four-lane passing sections. Another 9.4 km (5.8 miles) of U.S. Highway 287 will likely be reconstructed within the next three years providing four-lane passing areas south of Toston and on the long hill north of the I-90 interchange. However, there are no immediate plans for reconstructing U.S. Highway 12/287 between East Helena to I-90 as a four-lane facility. MDT's recent and proposed improvements to the route are expected to provide the necessary safety and operational enhancements to adequately accommodate traffic growth over the next decade.

The most logical location for future four-lane reconstruction on the route would be between East Helena and Townsend where the traffic volumes are highest and density of roadside development is greatest.

MDT does not envision four-lane reconstruction in this portion of the route occurring for ten or more years. South of Townsend, four-lane reconstruction probably couldn't be justified based on traffic volumes for at least twenty years.

The earliest anticipated date for the beginning construction of the Townsend-South project is 2009. A review of MDT's other planned highway projects shows that all of these projects will likely be completed before the Townsend-South construction project is initiated. None of these other MDT projects would be located in close proximity to the Townsend-South project area. The review also shows that none of the proposed projects would be of the same magnitude as the proposed Townsend-South reconstruction project.

Because MDT's other active and planned reconstruction projects are not contiguous with the proposed work area in the Townsend-South project area and would not generally occur at the same time, the cumulative environmental impacts of these projects on the proposed Townsend-South project would be minor. Similarly, the proposed improvements on U.S. Highway 287 would not be expected to produce any significant cumulative environmental impacts on other proposed projects in MDT's Butte District.

Although these MDT projects occur in the same general area of Broadwater County and would likely be implemented within two or three years of each other, the planning, design, and construction of each project has proceeded independently.

Implementing the Townsend-South reconstruction project would not trigger the need for improvements to other adjoining segments of the route, on U.S. Highway 12 east of Townsend, or on other county or local roads. Likewise, implementation of other known road projects within Broadwater County would not require that U.S. Highway 287 in the Townsend-South project be reconstructed.

MDT would continue to coordinate future projects with the public and other appropriate agencies, complete a review of potential impacts to the environment, and identify requirements for mitigation of any adverse effects as projects are developed and implemented.

Future growth in the Townsend-South corridor, Broadwater or Lewis and Clark Counties, or adjoining counties would likely be driven by factors other than improvements to U.S. Highway 12/287. Such factors are primarily related to the national and global economic conditions and the price of energy. For these reasons, it is impossible to predict what types of impacts might occur. It is certain that such development, should it occur, would happen independently of the Townsend-South reconstruction project.

4.5.5 PROJECTS BY FEDERAL AGENCIES IN THE AREA

Projects underway or proposed by federal agencies in the vicinity of the Townsend-South project corridor were also reviewed to help assess the potential for cumulative impacts. These projects are discussed in the following paragraphs.

U.S. FOREST SERVICE - HELENA NATIONAL FOREST PROJECTS.

The U.S. FOREST SERVICE (USFS) administers land in the Helena National Forest to the east and west of the U.S. Highway 12/287 corridor. A review of the Helena National Forest NEPA Quarterly Report (October 2004), shows a variety of active projects within the Townsend Ranger District of the Helena National Forest. All of these projects are well removed from the Townsend-South corridor and most will be implemented within the next year. Categorical Exclusions are being processed for many of the proposed actions, suggesting there would be no significant impacts associated with their implementation.

U.S. DEPARTMENT OF THE INTERIOR - BUREAU OF LAND MANAGEMENT PROJECTS.

The U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT (BLM) manages a variety of public lands in this area but none of their lands adjoin the U.S. Highway 287 corridor in the Townsend-South project area. The only project being undertaken by the BLM near the project corridor is described below.

- **Montana Army National Guard Withdrawal at Limestone Hills Training Area.** The Limestone Hills Training Area (LHTA) encompasses about 9,350 ha (23,100 acres) in the Elkhorn Mountains west of the

Missouri River southwest of Townsend. The LHTA contains 1,070 ha (2,640 acres) of private and state-owned inholdings, but the majority of the property is owned and managed by the BLM. The area is the main training area for the Montana Army National Guard. Access to the LHTA is provided from a county road joining US Highway 12/287 north of Townsend.

The BLM has allowed the National Guard to train on the property since the 1950s; however, the agency recently decided they want to modify the arrangement, and put more of the management responsibilities on the National Guard. The agency proposes to retain management of the mineral resources on the property but transfer the surface land to the U.S. Department of Defense.

Graymont Western mines limestone on a portion of the land in the LHTA. The most recent agreement between the BLM and the National Guard expires in 2014. Early in 2003, the Department of the Army announced its intentions to prepare a Legislative EIS to analyze the effects of the proposed withdrawal of lands supporting training exercises for the National Guard.

U.S. DEPARTMENT OF THE INTERIOR - BUREAU OF RECLAMATION PROJECTS.

The U.S. DEPARTMENT OF THE INTERIOR-BUREAU OF RECLAMATION manages lands surrounding Canyon Ferry Reservoir. The following projects or actions by the agency have or will be occurring in the general vicinity of the Townsend-South project area.

- **Canyon Ferry Reservoir Resource Management Plan/Environmental Assessment.** The U.S. DEPARTMENT OF THE INTERIOR-BUREAU OF RECLAMATION (BOR) recently completed the combined Resource Management Plan/Environmental Assessment (RMP/EA) to establish a 10-year management framework for conserving, protecting, enhancing, developing and using the physical and biological resources at Canyon Ferry Reservoir and its surrounding lands. Canyon Ferry Dam and Reservoir can be accessed from U.S. Highway 12/287 via several Secondary and county roads. The Finding of No Significant Impact (FONSI) document for the RMP was signed on February 7, 2003.
- **Silos Bay Marina Project.** Construction for a major new recreation facility on Canyon Ferry Reservoir north of Townsend near the Silos Recreation Area was started in September 2003. The project, known as the Silos Bay Marina, will be developed on land leased to Broadwater County by the BOR. Various state and federal agencies, the City of Townsend, and local residents have been involved in the planning and implementation of the project.

The Silos Bay Marina project, which is estimated to cost about \$3.3 million, will be implemented under several

phases and take several years to complete. The initial phase, which began construction in September 2003, involves excavating a deep-water bay that will provide the only safe docking site for boaters on the southwest side of Canyon Ferry Reservoir. Construction of two boat launch ramps, docks, a parking area, and roads are included in future phases. The final phase of project may provide a full-service marina and restaurant. No completion date for the entire project has been set.

Local officials are optimistic that investment in the marina will eventually be returned through new economic growth in the Townsend area and Broadwater County.

- **Long-Term Water Service Contract Renewals.** The BOR recently prepared a Draft Environmental Assessment for the long-term renewal of water service contracts with the Helena Valley and Toston irrigation districts and City of Helena. Water from Canyon Ferry Reservoir and Crow Creek Pumping Plant on the Missouri River near Toston provides water for power, flood control, irrigation, municipal and industrial supplies, fish and wildlife, recreation, and other purposes in the upper Missouri River basin. The Toston Irrigation District does not encompass any lands within the Townsend-South corridor.

Federally-managed lands do not exist in close proximity to the U.S. Highway 12/287 corridor. None of the federal projects considered here would be expected to result in cumulative effects because the projects are not contiguous with the proposed Townsend-South work area and would not generally occur at the same time.

The Silos Bay Marina will be a new recreational destination and could ultimately attract new visitors and seasonal residents to Canyon Ferry Reservoir and the Townsend area. Consequently, recreational use of the reservoir and its adjoining lands, travel routes, and traffic volumes on area roads may change over time. Since U.S. Highway 12/287 serves as one of the principal access routes to Canyon Ferry Reservoir, additional vehicle trips would likely be realized on the highway corridor in the future.

However, MDT's planning and proposed facility improvements would provide additional capacity on the route. New recreational development at Canyon Ferry Reservoir would not cause notable impacts to traffic operations or compromise traffic safety within the U.S. Highway 12/287 corridor.

For the above reasons, the cumulative environmental effects of these federal projects when considered with the proposed Townsend-South project would be minor.

4.5.6 PLANNED PROJECTS BY OTHERS IN THE AREA

Projects underway or proposed by others in the vicinity of the Townsend-South project corridor were also reviewed to help assess the potential for cumulative impacts.

The lands in the Townsend area, particularly between Townsend and East Helena, including some lands immediately adjacent to U.S. Highway 12/287, continue to see commercial and residential development. Currently, there are no known major subdivisions proposed for the immediate Townsend-South project corridor. Minor subdivision proposals continue to be received by the County in northern Broadwater County.

The City of Townsend is planning to reconstruct many of the streets within the community. This reconstruction work will begin in the summer of 2005 and be completed during 2006.

4.5.7 CONCLUSIONS

Based on the review of ongoing, planned and proposed projects by MDT and others, it was concluded that the proposed reconstruction of U.S. Highway 287 would not cause significant indirect or cumulative impacts to environmental resources in the Townsend-South project area.

MDT would continue to coordinate future projects with the public and other appropriate agencies, complete a review of potential impacts to the environment, and identify requirements for mitigation of any adverse effects as projects are developed and implemented. Likewise, other future federal and state projects will be subject to reviews under NEPA and MEPA to determine if significant environmental impacts are likely and identify measures to mitigate any identified adverse effects.

Broadwater County's Growth Policy Plan and Comprehensive Economic Development Strategy recognize that growth and development, if not planned, may cause adverse cumulative effects and change the "character" of the County. The Growth Policy has identified policies and objectives to guide new developments within the County. Broadwater County ultimately has the ability to control many potential cumulative effects associated with new growth and development through land use planning and regulations.

PART 5.0: Coordination with Others

PART 5.0: Coordination with Others

5.1 INTRODUCTION

This PART summarizes efforts undertaken to communicate with interested agencies and the public about the proposed highway improvements within the Townsend-South project area. The objectives of the activities performed to coordinate this project are to:

- *identify and include people, groups, and agencies that may be affected;*
 - *provide opportunities for interested parties to express their views, ideas, and concerns about the project;*
 - *ensure that interested parties receive understandable project information; and*
 - *make it apparent to interested parties that their opinions and ideas have been considered during the development of the project.*
-

5.2 AGENCY COORDINATION

5.2.1 COOPERATING AGENCIES

MDT and the FHWA are developing the proposed Townsend-South reconstruction project under Montana's National Highway System (NHS) Program. There were no requests issued to federal, state or local agencies with jurisdiction by law or special expertise to become Cooperating Agencies for this proposed action.

5.2.2 AGENCIES CONSULTED

Coordination with permitting and resource agencies has informally occurred during the development of the project through correspondence requesting comments and/or needed information. The following agencies and parties were consulted during the development of this Environmental Assessment:

- Montana Department of Commerce (MDOC)
- Montana Department of Environmental Quality (MDEQ)
- Montana Department of Fish, Wildlife & Parks (MDFWP)
- Montana State Historic Preservation Office (SHPO)
- Natural Heritage Program, Montana State Library (MNHP)
- U.S. Department of the Interior - U.S. Fish & Wildlife Service – (USFWS)
- U.S. Department of Agriculture - Natural Resources Conservation Service (NRCS)
- U.S. Department of the Army Corps of Engineers (COE)
- U.S. Environmental Protection Agency (EPA)
- Broadwater County Commissioners
- Mayor, City of Townsend

5.2.3. AGENCY COORDINATION

PROJECT NOTIFICATION LETTERS. Letters were sent to various state and federal agencies in May 2000 to provide notifications of this proposed project and to solicit comments and information useful to the development of the EA. Agency responses were used to help establish the scope of this environmental document.

SEPTEMBER 11, 2003 MEETING. A coordination meeting with interested or involved agencies was held on September 11, 2003. In addition to MDT and FHWA staff, representatives of the COE, USFWS, MDFWP, and MDEQ attended the meeting. Coordination also occurred with staff from the EPA who could not attend the September 2003 meeting.

The overall purpose of the meeting was to provide current information about the scope of the proposed project to interested agencies and seek input for the EA. Preliminary project plans and wetland impact estimates were provided in advance to meeting attendees to provide an indication of potential impacts to wetlands associated with rebuilding on or near the existing alignment.

Jeff Ebert, MDT's Butte District Administrator, provided a brief history of the project's development and explained past suspensions of work on the project. Mr. Ebert indicated FHWA and MDT discussed the need to prepare an Environmental Impact Statement (EIS) for the U.S. Highway 12/287 corridor between East Helena and Three Forks and indicated a decision was ultimately made to prepare a project-specific EA for the Townsend-South segment.

Agency representatives were also advised that the proposed project includes three passing lanes sections instead of one long four-lane segment as originally proposed. Reasons for these preliminary design changes were discussed.

Considerable discussion at the meeting focused on wetland impacts associated with reconstructing the highway on or near its present alignment. The COE representative commented that a wetland mitigation plan will need to be in place before the COE permits the project. The COE representative also indicated that the EA should document why other alternate alignments were not selected if the selected action is to rebuild on or near the existing highway. Other discussions regarding wetlands focused on possible measures to reduce wetland impacts and the status of wetland mitigation opportunities for the project and past efforts to seek mitigation sites in the drainage.

Potential effects to populations of Ute ladies' tresses, a plant listed under the *Endangered Species Act*, were also discussed. The USFWS representative indicated there will an adverse effect on the plants but there won't be a "taking" of the species because the Endangered Species Act treats plants differently than wildlife species. The USFWS representative mentioned that

threatened and endangered species issues must be appropriately addressed and resolved because they are important factors in the COE 404 permitting process.

The meeting concluded with a general discussion of wildlife passage and crossing issues.

5.3 PUBLIC INVOLVEMENT

5.3.1 PROJECT NEWS RELEASE

MDT issued a news release about the proposed Townsend-South project on May 23, 2001. The news releases typically contained a general description of the scope of work proposed at the time and announced the time, date, and location for a June 28, 2001 public information meeting on the project.

The news release was mailed to the following local news organizations:

- *Bozeman Daily Chronicle*
- *Helena Independent Record*
- *High Country Independent Press*
- *Meagher County News*
- *Three Forks Herald*
- *Townsend Star*

5.3.2 JUNE 28, 2001 PUBLIC MEETING

A public informational meeting about MDT's Townsend-South project was held at the Townsend High School Community Room at 7:00 p.m. on June 28, 2001. The meeting was held to discuss the project area, basic design elements, and the environmental process and schedule for developing the project. More than twenty people attended the meeting.

Oral comments heard at the meeting concerned impacts to agricultural properties and operations, traffic speeds and safety, impacts to wetlands and wildlife, and the need for additional right-of-way.

Seven written comment forms were received following the meeting. Six of the seven comments advocated relocating U.S. Highway 287 to the west side of the Missouri River, to avoid adverse agricultural, wetland, and right-of-way impacts. The remaining comment indicated general support for this project as a means to increase traffic safety on U.S. Highway 287.

5.3.3 PLANNED PUBLIC INVOLVEMENT ACTIVITIES

A Notice of Availability of the Environmental Assessment and planned date for a Public Hearing on the Townsend-South project will be mailed to all parties on the mailing list and advertised in local newspapers following FHWA's approval of this

document. During the public review and comment period, a public hearing—similar in format to the previous public meeting will be held. The date of the Public Hearing will be advertised at least fifteen (15) days in advance of the meeting. At the public hearing, the general public will be given the opportunity to provide official comments on the proposed action.

Written comments on the Environmental Assessment will be received for at least thirty (30) days following its distribution. After the close of the official comment period, comments received on the document will be reviewed and the text of the Environmental Assessment will be modified as required.

Public and agency comments on this document received by MDT will be evaluated to determine:

- whether significant impacts will occur from the implementation of the Preferred Action;
- if further consideration of the impacts discussed in the document is needed; and
- if new issues have arisen that must be addressed in the Environmental Assessment.

After the close of the official comment period, revisions will be made to the text of the Environmental Assessment where warranted by the comments received.

If no significant impacts are identified, MDT will submit a summary of comments received or a revised Environmental Assessment (if needed) to the FHWA and will request the agency to make a Finding of No Significant Impact (FONSI). The signed FONSI will then be attached to this document or to the revised Environmental Assessment. Federal, State, and local government agencies with interests in the project and others on the mailing list will be notified of the availability of the FONSI and revised Environmental Assessment.

If significant impacts are found, then MDT and FHWA must determine if an Environmental Impact Statement (EIS) must be prepared to advance the proposed Townsend-South project.

Other than the Public Hearing, additional public information meetings on this proposed project are not anticipated at this time. However, if this proposed project is implemented, meetings with individual property owners would occur to discuss right-of-way needs and the project's proposed access management plan.

5.4

DISTRIBUTION LIST FOR THE EA

The following agencies, groups, and individuals are being sent a copy of this Environmental Assessment:

FEDERAL, STATE, AND LOCAL AGENCIES

U.S. DEPARTMENT OF THE INTERIOR
U.S. Fish & Wildlife Service
Attn: Scott Jackson
301 South Park, Box 10023
Helena, MT 59626

U.S. ARMY CORPS OF ENGINEERS
Attn: Allen Steinle
Helena Regulatory Office
10 West 15th Street, Suite 2200
Helena, Montana 59626

EPA Montana Operations Office
Attn: Kristine Knutson
Federal Building
10 West 15th Street, Suite 3200
Helena, MT 59626

MONTANA DEPARTMENT OF
ENVIRONMENTAL QUALITY
Attn: Permitting and Compliance Division
P.O. Box 200901
Helena, Montana 59620-0901

MONTANA DEPARTMENT OF FISH,
WILDLIFE & PARKS
Region 3
Attn: Tom Hinz
1400 South 19th
Bozeman, MT 59718

MONTANA DEPARTMENT OF FISH,
WILDLIFE & PARKS
Region 3
Attn: Pat Flowers, Regional Supervisor
1400 South 19th
Bozeman, MT 59718

MONTANA DEPARTMENT OF FISH,
WILDLIFE & PARKS
Attn: Glenn Phillips
P.O. Box 200701
Helena, MT 59620-0701

MONTANA DEPARTMENT OF FISH,
WILDLIFE & PARKS
Attn: Jeff Hagener, Director
P.O. Box 200701
Helena, MT 59620-0701

MONTANA DEPARTMENT OF FISH,
WILDLIFE & PARKS
Attn: Debbie Dils
Lands Office
P.O. Box 200701
Helena, MT 59620-0701

DEPARTMENT OF NATURAL RESOURCES &
CONSERVATION
Attn: Area Manager
Central Lands Office
P.O. Box 201601
Helena, MT 59620-1601

STATE LIBRARY
Collection Management Librarian
1515 East Sixth Avenue
Helena, MT 59620-1800

ENVIRONMENTAL QUALITY COUNCIL
Attn: Todd Everts
P.O. Box 201704
Helena, MT 59620-1704

BROADWATER COUNTY COMMISSIONERS
515 Broadway Street
Townsend, MT 59644-2397

Honorable Mary Alice Upton, Mayor
City of Townsend
129 South Spruce
Townsend, MT 59644

The following individuals were sent a letter announcing availability of EA and providing notice of the time, date and location of the public hearing on this project.

TOWNSEND-SOUTH PROJECT CORRIDOR LANDOWNERS (From R/W Plans)

Michael & Darcy Anderson
96 Shelley Road
Townsend, MT 59644-9745

Bruce and Charlene Beebe
P.O. Box 11
Townsend, MT 59644

Michael and Estrelleta Burtch
8045 Highway 287
Townsend, MT 59644

Davis Bar Triangle T Ranch
8393 Highway 287
Townsend, MT 59644

Robert L and Linda E. Davis
8537 Highway 287
Townsend, MT 59644

Curtis and Zeldia Diel
454 Flynn Lane
Townsend, MT 59644

William & Jerrie Evans
605 Broadway Street
Townsend, MT 59644

Flynn Ranch
674 Flynn Lane
Townsend, MT 59644

John T. Flynn
P.O. Box 96
Townsend, MT 59644

Gary & Charlene Guthrie
P.O. Box 445
Townsend, MT 59644

Hahn Ranch Corporation
7996 Highway 287
Townsend, MT 59644

John and Tamie Hahn
53 Carson Lane
Townsend, MT 59644

Freida Herman
P.O. Box 174
Townsend, MT 59644

Henry and Violet Lohr
P.O. Box 1288
Townsend, MT 59644

Montana Rail Link
Post Office Box 16390
101 International Way
Missoula, Montana 59808

Scott & Dede Mostad
P.O. Box 1259
Townsend, MT 59644

Joseph P. and Cary A. Nelson
P.O. Box 1187
Townsend, MT 59644

R.H. & Joann Price
P.O. Box 297
Townsend, MT 59644-97

R & L Ranch Company
8515 Highway 287
Townsend, MT 59644

Charles & Kathryn Ragen
14451 Mandan Ct
Apple Valley, CA 92307-5349

Delmar & Audrey Schubring
P.O. Box 881
Townsend, MT 59644

Dennis Scoffield
230 Litening Barn Lane
Townsend, MT 59644

Ward & Sherry Scoffield
80 Shelley Road
Townsend, MT 59644

Townsend Electric, Inc.
P.O. Box 401
Townsend, MT 59644

TRI G, Inc.
8545 Highway 287
Townsend, MT 59644

Gail & Lorrie Vennes
P.O. Box 1170
Townsend, MT 59644-11

Larry Wilkin
1412 Sagebrush
Billings, MT 59102

Linda White
23 Lower Deep Creek Road
Townsend, MT 59644

Edwin Watson
152 Springville Lane
Townsend, MT 59644

The following individuals who previously submitted comments at the June 28, 2001 public meeting were sent notices of the EA's availability and the public hearing.

Monti Olsen
P.O. Box 103
Toston, MT 59643

Darryl Scharrer
P.O. Box 102
Toston, MT 59643

Joanne Motta
100 Slifka Lane
Toston, MT 59643

Mark Slifka
03 Slifka Lane
Toston, MT 59643

Judith Slifka
P.O. Box 65
Toston, MT 59643

Kyle Motta
P.O. Box 63
Toston, MT 59643

Edna Hemsley
402 S Spruce #2
Townsend, MT 59640-2812

5.5 AGENCIES WITH JURISDICTION AND/OR PERMITS REQUIRED

The following agencies have jurisdictional authority or permit requirements applicable to the proposed Townsend-South project:

U.S. Department of the Army, Corps of Engineers (Regulatory Office) -- *Section 404* Permit for placing fill material associated with road construction in wetlands or other "Waters of the U.S." including jurisdictional irrigation ditches.

U.S. Department of the Interior, Fish and Wildlife Service – Formal consultation with MDT and FHWA regarding project-related impacts to Ute-ladies' tresses and suitable habitat for this threatened plant species. Formal consultation was completed in June 2005.

Montana Department of Fish, Wildlife & Parks - ***124SPA*** Permit as required under the *Montana Stream Protection Act* for culvert installations and related work in Deep, Greyson, and Dry Creeks.

Montana Department of Environmental Quality, Permitting and Compliance Division - Notice of Intent to be covered by General Permit for storm water and pollution prevention plan in accordance with *Section 402*/Montana Pollutant Discharge Elimination System.

Broadwater County - Floodplain Development Permit for the proposed highway reconstruction if future work encroaches on the delineated floodplains.

APPENDICES

APPENDIX A: List of Preparers

The following parties are responsible for the preparation and content of this document:

Jean A. Riley, P.E., Bureau Chief
Environmental Services
Montana Department of Transportation
P.O. Box 201001
Helena, MT 59620-1001

Jeffrey A. Patten, Operations Engineer
Montana Division Office
Federal Highway Administration
2880 Skyway Drive
Helena, MT 59602

The following consultants assisted the Montana Department of Transportation coordinate, develop supporting information, and write this document:

ROBERT PECCIA & ASSOCIATES, INC. – LEAD FIRM

Consulting Civil Engineers, Planners and Designers
825 Custer Avenue
P.O. Box 5653
Helena, Montana 59604

LAND & WATER CONSULTING

Biological Resource Consultants
801 North Last Chance Gulch
P.O. Box 239
Helena, MT 59624

GARCIA AND ASSOCIATES

Sensitive Plant Survey
151 Evergreen Drive, Suite B
Bozeman, MT 59715

LISA DRUCKENMILLER

Botanist/Sensitive Plant Specialist
4804 Claret St. NW
Calgary, Alberta T2L1C1

RENEWABLE TECHNOLOGIES, INC.

Cultural Resource Consultants
511 Metals Bank Building
Butte, MT 59701

**AABERG CULTURAL RESOURCES
CONSULTING SERVICE**

Cultural Resource Consultants
2909 East McDonald
Billings, Montana 59102

BIG SKY ACOUSTICS, LLC

Highway Noise Consultant
P.O. Box 27
Helena, MT 59624

APPENDIX B: Correspondence Pertinent to the Project

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date of Land Evaluation Request July 30, 2004/REV 11/01/04		
Name of Project TOWNSEND-SOUTH NH-F 8-4 (16) 78; Control No. 1420		Federal Agency Involved U.S. DOT Federal Highway Administration/ Montana Department of Transportation		
Proposed Land Use U.S. Highway 287 Reconstruction and New R/W		County and State Broadwater County, Montana		
PART II (To be completed by NRCS)		Date Request Received by NRCS		
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form).		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Average Farm Size
Major Crop(s)	Farmable Land in Govt. Jurisdiction Acres: %	Amount of Farmland As Defined in FPPA Acres: %		
Name of Land Evaluation System Used	Name of Local Site Assessment System	Date Land Evaluation Returned by NRCS		
PART III (To be completed by Federal Agency)		Alternative Site Rating		
		Preferred Action	Other Alternatives	Existing Highway (No-Action)
A. Total Acres To Be Converted Directly (Area of farmland within new R/W)		54.59	NA	0.0
B. Total Acres To Be Converted Indirectly		0.00	NA	0.0
C. Total Acres in Site (Total Acres of New or Existing Right-of-Way)		165.36	NA	92.37
PART IV (To be completed by NRCS)				
A. Total Acres Of Prime And Unique Farmland (Area in Existing or New R/W)		118.60		64.11
B. Total Acres Of Statewide or Local Important Farmland		0.00		0.00
C. Percentage Of Farmland in County or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		100 - Assumed		
PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points	Preferred Action	Other Alternatives Not evaluated on this form
1. Area in Nonurban Use	15	15		15
2. Perimeter in Nonurban Use	10	10		10
3. Percent of Site Being Farmed	20	16		16
4. Protection Provided by State and Local Government	20	0		0
5. Distance From Urban Builtup Area	N/A	N/A		N/A
6. Distance to Urban Support Services	N/A	N/A		N/A
7. Size of Present Farm Unit Compared to Average	10	10		10
8. Creation of Nonfarmable Farmland	25	10		0
9. Availability of Farm Support Services	5	3		3
10. On-Farm Investments	20	15		15
11. Effects of Conversion on Farm Support Services	25	0		0
12. Compatibility With Existing Agricultural Use	10	2		0
TOTAL SITE ASSESSMENT POINTS	160	81		69
PART VII (To be completed by Federal Agency)				
Relative Value Of Farmland (From Part V)		100	100	
Total Site Assessment (From Part VI above or a local site assessment)		160	81	
TOTAL POINTS (Total of above 2 lines)		260	181	
Site Selected: Action As Proposed	Date of Selection	Was a Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>		
Reason For Selection				

(See Instructions on reverse side)

Form AD-1006 (10-83)

**Robert
Peccia &
Associates**



Civil
Transportation
Environmental
Engineers

P.O. Box 5653
825 Custer Avenue
Helena, MT 59604
(406) 447-5000
FAX (406) 447-5036
www.rpa-hln.com

July 30, 2004

District Conservationist
Natural Resources Conservation Service
Townsend Field Office
415 South Front Street
Townsend, MT 59644-2813

COPY

Subject: Townsend-South
NH-F 8-4 (16) 78; Control No. 1420

Dear District Conservationist:

Robert Peccia & Associates is responsible for preparing the required Environmental Assessment for the Townsend-South highway reconstruction project proposed by the Montana Department of Transportation (MDT).

In February 2004, Mark Lambrecht of our staff contacted you with information about this proposed project. Based on our review of existing soils information and mapping, it is apparent that soils considered to be "Important Farmland" (Prime, Prime if irrigated, and farmland of statewide or local importance) exist along about 70% of the existing and proposed project corridors. Therefore, in accordance with the Farmland Protection Policy Act, we've estimated the potential direct and indirect conversions of Important Farmland in the project area and are processing form AD-1006. Preliminary right-of-way plans have not yet been completed but the acreages for converted area and total right-of-way area shown on the form are believed to be reasonable estimates.

Attached is a copy of the partially completed Farmland Conversion Impact Rating form. We request that you fill out Parts II, IV, and V of the form and return it to us so we can complete the remainder of form and the necessary processing.

Please return a copy of the form to us at your earliest convenience. At this time, we anticipate the Draft Environmental Assessment for this project will be available for public review late this fall. We'll notify you when the document's available for review and comment.

If you have questions, please don't hesitate to contact me at 447-5000. Thanks for your cooperation.

Sincerely,
ROBERT PECCIA & ASSOCIATES, Inc.

Daniel M. Norderud, AICP
Environmental Studies Division Manager

Attachment
cc: file



MONTANA HISTORICAL SOCIETY

225 North Roberts ♦ P.O. Box 201201 ♦ Helena, MT 59620-1201
♦ (406) 444-2694 ♦ FAX (406) 444-2696 ♦ www.montanahistoricalsociety.org ♦

RECEIVED

APR 18 2005

ENVIRONMENTAL

April 13, 2005

JON AXLINE
MDT
2701 PROSPECT AVENUE
PO BOX 201001
HELENA MONTANA 59620

RE: NH-F 8-4 (16) 78 Townsend - South Control No. 1420

Dear Jon,

Based on your description of this undertaking, and our phone conversation this morning, we would propose a finding of no adverse effect. We will record a No Adverse Effect finding for sites 24BW0729, 24BW0836, and 24BW0837.

If you have any questions about any points that I have made, you may call me at (406) 444-0388, or email jwarhank@state.mt.us.

Sincerely,

Josef J Warhank
Review & Compliance Officer

file: MDT/2005



Montana Department of Transportation

2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

David A. Galt, Director
Judy Martz, Governor

April 8, 2004

Mark Baumlner, Ph.D.
State Historic Preservation Office
1410 8th Avenue
P O Box 201202
Helena, MT 59620-1202

2004040905
RECEIVED

APR 22 2004

ENVIRONMENTAL

RECEIVED
APR 09 2004

BY: _____

Jared

Subject: NH-F 8-4(16)78 F
Townsend - South
Control No. 1420

CONCUR
MONTANA SHPO

DATE 4/16/04 SIGNED _____

[Signature]

MDT

Townsend -
South
three bridges

Dear Mark:

Enclosed are the site forms and CRABS for three reinforced concrete bridges on the above project. Of those, we have determined that the Montana Ditch Bridge (24BW9956) and the Deep Creek Overflow Bridge (24BW958) eligible for the National Register under Criterion C and request your concurrence. The proposed project to reconstruct and widen U.S. Highway 287 between Townsend and Toston would result in the removal of both bridges. We will treat them under the terms of the Programmatic Agreement.

The August 5, 2003 Determination of Effect inadvertently omitted the Northern Pacific Railway (24BW818) and the Wallace House (24BW812). The existing and proposed alignment for the roadway does not encroach on the railroad Right-of-Way through the entire length of the project. The existing historic alignment of the railroad would be perpetuated. There would be change in the setting of the railroad and its significance to the historic development of Broadwater County and Montana would remain intact and undiminished. The proposed project, therefore, would have **No Effect** to the NRHP-eligible railroad grade.

At the Wallace House (attachment), the existing centerline would be perpetuated, but the roadway would be widened 10-feet from 30-feet to 40-feet. The existing centerline is 131-feet from the buildings on property; the pavement edge is 116-feet from the buildings. The roadway would be widened 5-feet closer to the property, placing the proposed pavement edge 111-feet from the site. Construction would be confined to the R/W and would not encroach on the site. A row of trees between the site's buildings and the roadway would be removed. The loss of the trees, however, would not have a significant impact on the property as there are additional rows of trees between it and the road that would not be removed. The vegetative screen would remain in-place.

There would be **No Adverse Effect** to the Wallace House as a result of the proposed project. The buildings on the site would remain intact and unaltered. The pavement edge would be only 5-feet closer to the property. That footage, moreover, would constitute paved shoulders - the driving lanes would remain the same distance away from the site's

file: MDT/2004

buildings. Although a row of trees that screens the property from the roadway would be removed, two rows of screening would remain untouched outside the R/W boundary. The setting would essentially remain intact, but the loss of five trees would constitute an effect, although minor, to the property. The characteristics that make the site eligible for the National Register would be perpetuated and the project would not have a significant impact to it. We request your concurrence.

If you have any questions, please contact me at 444-6258.



Jon Axline, Historian
Environmental Services

Enclosures

cc: Jeff Ebert, P.E., Butte District Administrator
Tom Martin, Consultant Design Bureau
Bonnie Steg, Resources Section

2003080600



Montana Department of Transportation

2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001David A. Galt, Director
Judy Martz, Governor

August 5, 2003

Josef

MDT - SOUTH
Kieckbusch Farm
(24BW816)RECEIVED
AUG 06 2003

BY: _____

Mark Baumler, Ph.D.
State Historic Preservation Office
1410 8th Avenue
P O Box 201202
Helena, MT 59620-1202Subject: NH-F 8-4(16)78
Townsend - South
Control No. 1420CONCUR
MONTANA SHPO

DATE 17 Aug 03 SIGNED

Enclosed is the Determination of Effect for the above project in Broadwater County. We have determined that the proposed project would have No Effect to Feature 2 at the Kieckbusch Farm (24BW816) for the reasons specified in the document. We request your concurrence.

If you have any questions, please contact me at 444-6258.

Jon Axline, Historian
Environmental Services

Enclosure

cc: Jeff Ebert, P.E., Butte District Administrator
Carl Peil, P.E., Preconstruction Bureau
Bonnie Steg, Resources Section

2003071403



Montana Department of Transportation

2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001David A. Galt, Director
Judy Martz, Governor

July 11, 2003

Mark Baumler, Ph.D.
State Historic Preservation Office
1410 8th Avenue
P O Box 201202
Helena, MT 59620-1202

RECEIVED

AUG - 1 2003

ENVIRONMENTAL

RECEIVED
JUL 14 2003

BY:-----

Subject: NH-F 8-4(16)78 F
Townsend - South
Control No. 1420

Enclosed is the updated cultural resource report, CRABS, and site forms for the above project in Broadwater County. The original cultural resource report for this MDT project was completed by RTI in 1994 and submitted to SHPO for comments. Only Feature 2 at the Kieckbusch Farm (24BW816) was determined eligible for the National Register. One site, the Wallace House (24BW812), was not old enough to meet the NRHP age criteria; it has since reached the 50 year age mark. Three sites, 24BW836, 24BW837, and 24BW728/838 are irrigation ditches and are covered under a programmatic agreement. Two archaeological sites, 24BW819 and 24BW820, were left unresolved pending the development of the plans for the project. One site, the Northern Pacific Railway (24BW818) was determined eligible for the NRHP under Criterion A.

Aaberg Cultural Resources Consulting Service (ACRCS) reinvestigated the old Townsend - South project area in 2003. No additional sites were discovered other than those previously recorded by RTI in 1994. ACRCS did conduct testing at 24BW819 and 24BW820 to determine their National Register eligibility. Based on the investigation, ACRCS recommends both sites ineligible to the National Register. We agree with that recommendation and request your concurrence. In addition, ACRCS recommended the Wallace House (24BW812) eligible for the National Register. We also agree with that recommendation. Finally, we continue to agree that 24BW818 and Feature 2 at 24BW816 are eligible for the National Register. The three irrigation ditches are still covered under the programmatic agreement. We request your concurrence.

If you have any questions, please contact me at 444-6258.

Jon Axline, Historian
Environmental Services

Enclosures

cc: Jeff Ebert, P.E., Butte District Administrator
Carl Peil, P.E., Preconstruction Bureau
Bonnie Steg, Resources SectionCONCUR
MONTANA SHPO

DATE 28JUL03 SIGNED

Montana Department of Fish, Wildlife & Parks



1420 East Sixth Avenue
Helena, Montana 59620

October 9, 1991

Mr. David S. Johnson, Chief
Preconstruction Bureau
Dept. of Highways
2701 Prospect
Helena, MT 59620

Dear Mr. Johnson:

RE: F 8-4(16)78
Townsend - Toston C#1420

We have reviewed your above-mentioned proposed project for reconstruction of FAP 8 in Broadwater County, beginning at the Townsend south city limits proceeding south 10.3 miles to the junction of FAS 285.

The Toston Fishing Access Site and Deepdale Fishing Access Site are near your project boundaries. These lands have 4(f) usage as defined by Section 4(f) of the 1966 Department of Transportation Act. If you anticipate any impacts to our site as a result of your highway reconstruction project, please contact us so we can work with you to mitigate any problems.

The Toston Fishing Access Site and Deepdale Fishing Access Site areas do fall under 6(f) of the Land and Water Conservation Fund Act.

Please keep Bob Martinka, the regional supervisor of region 3, informed as this project develops.

If you need more information regarding the Toston Fishing Access Site and Deepdale Fishing Access Site area, please let us know. Thank you for the opportunity to comment. We appreciate your cooperation.

Sincerely,

Mary Ellen McDonald

MARY ELLEN MC DONALD
Administrative Officer
Operations Bureau
Parks Division

cc: Bob Martinka

Date Recd. Preconst. 10-11-91		MAIL ROUTE		Attach	Initial
Act	Info		30 Preconst Engr		
			30 Assistant		
			30 Office Mgr		
			31 Safety Mgmt.		
			32 Road Design		
			33 Environment		
			34 Hydraulics		
			35 Survey & Mapping		
			36 Traffic Eng.		
			37 Traffic Operations		
			39 Consultant Dsn.		
			<i>Rapp</i>		

MONTANA RAIL LINK, INC.

Post Office Box 8779
Missoula, Montana 59807
(406) 523-1500
(406) 523-1493 FAX



August 19, 1993

Mr. Norman Hobby
Department of Highways
State of Montana
P.O. Box 201001
Helena, MT 59620-9726

Dear Mr. Hobby:

Subject: F 8-4(16)78 [1420]
Townsend - Toston

Date		Received		AUG 20 1993	
Info	Act	File	By	Init	Comments
			PAV Bureau		
			20.0001		
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			100.0001		

The recently adopted 100 foot offset from a mainline track to a permanent easement, represents the minimum distance Montana Rail Link believes it can grant and still maintain a flexible railroad system. The Burlington Northern standard of no permanent easement closer than 120 feet to the nearest track, is based on the minimum distance required to provide storage for a tractor-trailer combination between the highway and the railroad.

The Burlington Northern standard is a very good guideline to use whenever a public road exists between the highway and the railroad. Montana Rail Link supports this guideline as an effective way of reducing the problem of tractor-trailer combinations fouling a railroad crossing while waiting to enter the highway. If you are asking for an absolute standard to be used in your highway designs, the 120 feet to the nearest track, would be a good rule. This is especially true if you keep in mind Montana Rail Link will consider granting easements to within 100 feet of its mainline track, in areas where there are no adjacent public approach roads.

For the reasons discussed above, the distance from the highway's shoulder to the centerline of the nearest track, should be no closer than 120 feet.

RK/C-2047....State/Townsend-Toston



Mr. Norman Hobby
August 19, 1993
Page 2

As for F 8-4(16)78 Townsend-Toston, Montana Rail Link is proposing to lengthen its siding track at Toston approximately 3,800 ^{West} feet ~~East~~ of its existing location. This could definitely impact your design in view of the standards previously outlined.

Sincerely,

Richard L. Keller/jp

Richard L. Keller
Chief Engineer

SRW:jp

APPENDIX C: Nationwide Section 4(f) Evaluations and Supporting Materials

MONTANA DIVISION

**"NATIONWIDE" SECTION 4(f) EVALUATION FOR MINOR IMPACTS
ON
HISTORIC SITES
EXCLUDING HISTORIC BRIDGE REPLACEMENTS**

Project # NH-F 8-4 (16) 78 F, (C.N.#1420)
Project Name: TOWNSEND-SOUTH

Date: August 1, 2005
Location: Wallace House (24BW812)
Broadwater County, Montana

The Howard and Rubye Wallace House site (24BW0812) consists of a house with attached garage and two sheds surrounded by a shelterbelt. The house and garage, built around 1947, are good examples of residential architecture in the post-World War II period. In 1995, the Wallace House was recommended as ineligible for the *National Register of Historic Places* (NRHP) because the site was less than 50 years old. MDT's 2003 update to the cultural resources report for the Townsend-South project recommended 24BW812 as NRHP-eligible.

The reconstruction of U.S Highway 287 in the vicinity of the Wallace House will provide a four-lane roadway and improved roadside slopes. New right-of-way will be acquired from the property containing the Wallace House. Structures on the site will not be affected but several trees within the shelterbelt between the house and the highway will be removed. The Preferred Alternative will also reconstruct the driveway approach to the Wallace House. The proposed improvements will not affect any features that make the Wallace Site eligible for the NRHP or substantially change the setting of the property. In April 2004, MDT submitted a Determination of Effect that concluded the Preferred Alternative would have **no adverse effect** to the Wallace House. SHPO concurred with this determination on April 21, 2004.

A map showing the location of 24BW812 is provided in Part 4.0 of the Environmental Assessment.

NOTE: Any response in a box requires additional information. Consult the "Nationwide" Section 4(f) Evaluation criteria.

	<u>YES</u>	<u>NO</u>
1. Is the 4(f) site adjacent to the existing highway?	<u>X</u>	<input type="checkbox"/>
2. Does the proposed project require the removal or alteration of historic structures, and/or objects? <i>The proposed highway improvements will not affect structures on the site but will require additional right-of-way from the property containing 24BW812 and remove several trees within the shelterbelt between the house and the highway.</i>	<input type="checkbox"/>	<u>X</u>
3. Does the proposed project disturb or remove archaeological resources which are important to preserve in-place rather than to recover?	<input type="checkbox"/>	<u>X</u>
4. Is the impact on the 4(f) site considered minor (i.e.: no effect; or no adverse effect)? <i>There will be no adverse effect to 24BW812.</i>	<u>X</u>	<input type="checkbox"/>
5. Has the STATE HISTORIC PRESERVATION OFFICE (SHPO) agreed in writing with the assessment of impacts, and the proposed mitigation?	<u>X</u>	<input type="checkbox"/>
6. Is the proposed action under an <u>Environmental Impact Statement</u> (E.I.S.)?	<input type="checkbox"/>	<u>X</u>
7. Is the proposed project on a new location? <i>The new road will be built on and adjacent to the existing alignment. Widening will occur along the east (left) side of the existing roadway due to the proximity of the Montana Rail Link railroad line.</i>	<input type="checkbox"/>	<u>X</u>
8. The Scope-of-Work for the proposed project is one of the following: a) <i>Improved traffic operation;</i> b) <i>Safety improvements;</i>	<u>X</u>	<input type="checkbox"/>

- c) 3R;
- d) Bridge replacement on essentially the same alignment; or
- e) **Addition of lanes (auxiliary turn lanes and passing lanes).**

ALTERNATIVES CONSIDERED

- | | <u>YES</u> | <u>NO</u> |
|---|------------|--------------------------|
| 1. The "do-nothing" ALTERNATIVE has been evaluated, and is <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>The existing highway has physical deficiencies that contribute to reduced safety for users of U.S. Highway 287. The road's substandard width, steep roadsides, and presence of obstructions within the clear zone are related to the design of the road and can be corrected only by reconstruction.</i> | | |
| 2. An ALTERNATIVE has been evaluated on the existing alignment which improves the highway without any 4(f) impacts, and is also <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>Shifting the road to the west of the existing alignment would eliminate affects to the Wallace House; however, such an alignment shift would result in an unacceptable encroachment on the Montana Rail Link rail line.</i> | | |
| 3. An ALTERNATIVE on a new location avoiding the 4(f) site has been evaluated, and is <u>not</u> considered to be feasible and prudent. | <u>X</u> | <input type="checkbox"/> |
| <i>The location of this project was established by the continuous use of the existing roadway since the 1930's. The road would have to be shifted at least 200 m (650 feet) to the east to avoid structures within the site. Such an alignment shift would result in extensive impacts to area wetlands, convert large areas of important farmland and agricultural land, disrupt existing irrigation systems and utilities, and require significant new right-of-way acquisition.</i> | | |

MINIMIZATION OF HARM

- | | | |
|---|----------|--------------------------|
| 1. The proposed project includes all possible planning to minimize harm. | <u>X</u> | <input type="checkbox"/> |
| 2. Measures to minimize harm include the following: | <u>X</u> | <input type="checkbox"/> |
| <i>The project will be accomplished in a manner that does not substantially change the overall setting of the Wallace House. The proposed project avoids the use of any buildings on the site.</i> | | |

COORDINATION

- | | | |
|--|----------|-------------------------------------|
| 1. The proposed project has been COORDINATED with the following: | | |
| a) SHPO
Concurrence with NRHP-eligibility determination for 24BW812 on July 28, 2003. | <u>X</u> | <input type="checkbox"/> |
| Concurrence with a Determination of No Adverse Effect for impacts on the Wallace House on April 21, 2004. | | |
| b) ADVISORY COUNCIL ON HISTORIC PRESERVATION
SHPO's concurrence with MDT's no adverse effect determination does not require that coordination be undertaken with the ACHP. | — | <input checked="" type="checkbox"/> |
| c) Property owners
Public Information Meeting -- June 28, 2002 | <u>X</u> | — |
| d) Local/State/Federal agencies | <u>X</u> | <input type="checkbox"/> |

2. One of the preceding had the following comment(s) regarding this proposed project, and/or the mitigation:

No comments received.

SUMMARY

The proposed action is preferred because the No Build Alternative does not satisfy the specified purpose and need for improving U.S. Highway 287 south of Townsend. The No Build Alternative does not meet the traveling public's needs because it does not address the deficient surface width associated with the road and its bridges and does not eliminate or reduce other identified conditions that contribute to safety and operation problems on the existing roadway. The No Build Alternative does not provide a traffic facility consistent with all MDT design standards for Rural Principal Arterials Montana's National Highway System.

Rebuilding the road on an alignment similar to that of the existing highway could be accomplished, however, this alternative would result in an unacceptable encroachment on the nearby Montana Rail Link railroad main line. Shifting the alignment of U.S. Highway 287 to the west of the present highway would avoid any effects to the Wallace House site but would also place the new road too close to the railroad. The road would have to be shifted easterly by some 200 m (650 feet) or more to avoid impacts to the Wallace House. Such an alignment is not feasible because it would substantially increase engineering and construction costs and likely convert large areas of important farmland and agricultural land, disrupt existing irrigation systems and utilities, and require significant new right-of-way acquisition. The design and location alternatives considered for this proposed project are described in Part 3.0 of the EA. Therefore, no feasible and prudent alternatives exist to avoid the minor effects associated with reconstructing U.S. Highway 287 in the vicinity of the Wallace House (24BW812).

Part 3.0 of the attached Environmental Assessment describes the alternatives considered by MDT and the analysis used to identify a preferred alternative for this proposed project. The proposed action meets all criteria regarding the required **Alternatives, Coordination, and Measures to Minimize Harm**. All possible planning to minimize harm to the identified irrigation ditches has been undertaken and will be incorporated in this proposed project. This proposed project therefore complies with the December 23, 1986 Final Nationwide Section 4(f) Evaluation by the U.S. DEPARTMENT OF TRANSPORTATION's Federal Highway Administration.

APPROVAL

This document is submitted pursuant to **49 U.S.C. 303** and in accordance with the provisions of **16 U.S.C. 470f**.



Thomas L. Hansen, P.E., Supervisor
Engineering Section
MDT Environmental Services

Date: 9/20/05

Approved: Jeffrey A. Patten
Federal Highway Administration

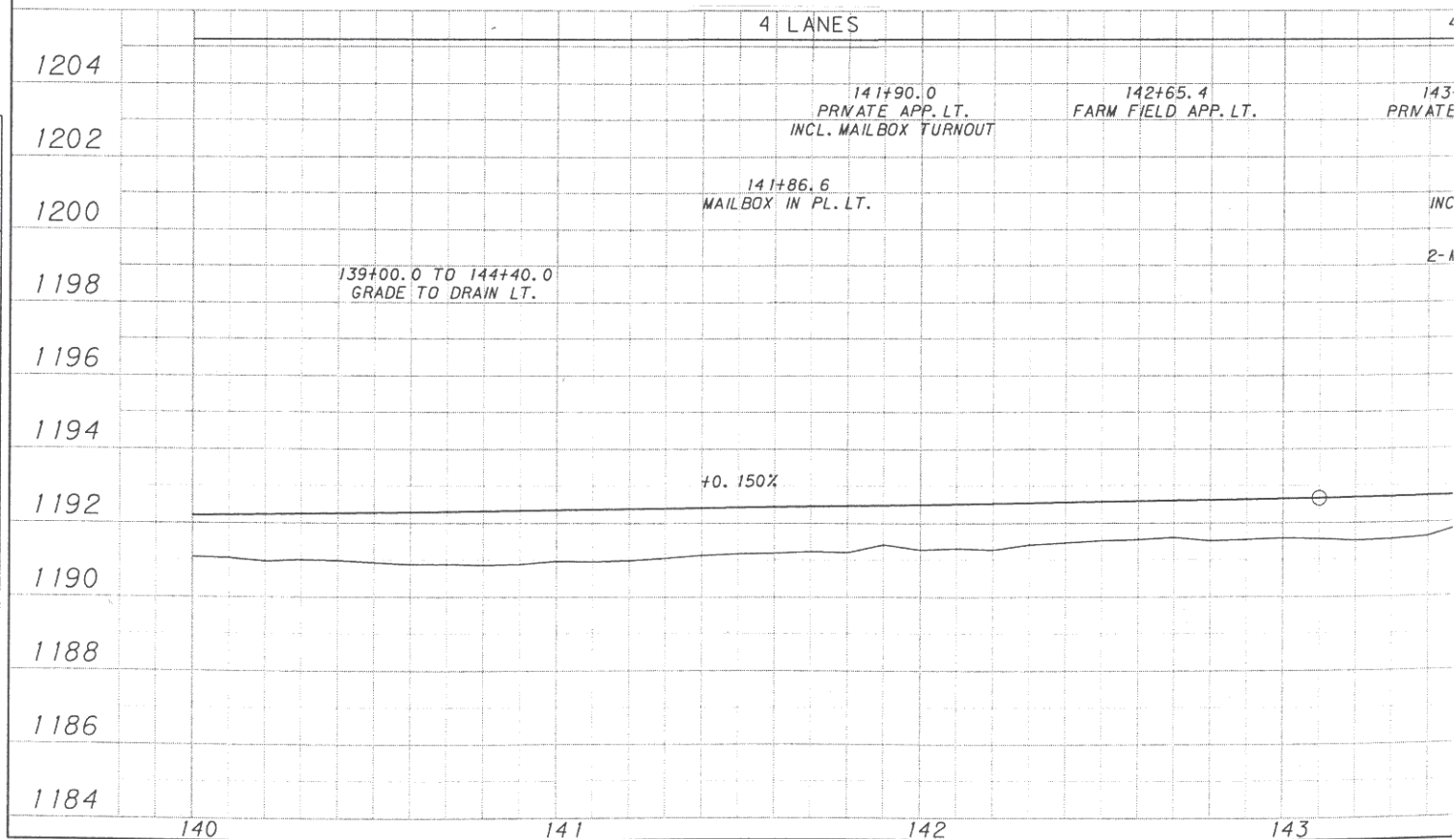
Date: Oct 6, 2005

140+79.4 18.3
457 mm RCP IN PL.
REMOVE

141+92.0 10.1
457 mm CMP IN PL. LT.
REMOVE
NEW 450 mm APP. PIPE LT.

142+65.4 7.6
457 mm RCP IN PL. LT.
REMOVE
NEW 450 mm APP. PIPE LT.

143+53.0
NEW 450 mm APP. PIPE RT.
143+53.6
457 mm RCP IN PI. RT. 10.1



MONTANA DIVISION
"NATIONWIDE" SECTION 4(f) EVALUATION FOR MINOR IMPACTS
ON
HISTORIC SITES
EXCLUDING HISTORIC BRIDGE REPLACEMENTS

Project # NH-F 8-4 (16) 78 F, (C.N. #1420)
 Project Name: TOWNSEND-SOUTH

Date: August 1, 2005
 Location: Montana Ditch (24BW729)
Broadwater County, Montana

The Montana Ditch (24BW729) is a privately developed irrigation feature crossed by U.S Highway 287 at RP 78.9 about 1 mile south of Townsend. The Montana Ditch, consisting of an earthen canal approximately 11 miles long and about 10 feet wide, was originally constructed around 1900. The ditch diverts water from the Missouri River south of Townsend and carries it to agricultural fields on the east side of the river. The Montana Ditch has been continually maintained since its construction and occurs in its original alignment. All but the extreme north end of the original ditch is still in use. A map showing the location of the Montana Ditch is provided in Part 4.0 of the EA.

Reconstruction of U.S. Highway 287 will affect the Montana Ditch where the present road crosses the irrigation facility. The Townsend-South project will shift the centerline of the new road slightly to the east and would reconstruct and widen the existing two-lane highway in the vicinity of the Montana Ditch. The project will also install a new concrete or metal culvert beneath the road and make minor revisions to the alignment of the canal at the Montana Ditch crossing.

NOTE: Any response in a box requires additional information. Consult the "Nationwide" Section 4(f) Evaluation criteria.

- | | <u>YES</u> | <u>NO</u> |
|--|--------------------------|--------------------------|
| 1. Is the 4(f) site adjacent to the existing highway? | <u>X</u> | <input type="checkbox"/> |
| 2. Does the proposed project require the removal or alteration of historic structures, and/or objects? | <input type="checkbox"/> | <u>X</u> |
| 3. Does the proposed project disturb or remove archaeological resources which are important to preserve in-place rather than to recover? | <input type="checkbox"/> | <u>X</u> |
| 4. Is the impact on the 4(f) site considered minor (i.e.: no effect; or no adverse effect)? <i>There would be no adverse effect to 24BW729.</i> | <u>X</u> | <input type="checkbox"/> |
| 5. Has the STATE HISTORIC PRESERVATION OFFICE (SHPO) agreed in writing with the assessment of impacts, and the proposed mitigation? | <u>X</u> | <input type="checkbox"/> |
| 6. Is the proposed action under an <u>Environmental Impact Statement (E.I.S.)</u> ? | <input type="checkbox"/> | <u>X</u> |
| 7. Is the proposed project on a new location? | <input type="checkbox"/> | <u>X</u> |

The centerline of the new road will be shifted slightly to the east near the Montana Ditch highway crossing. Widening will occur along the east (left) side of the existing roadway due to the proximity of the Montana Rail Link railroad line throughout the corridor.

- | | | |
|---|----------|--------------------------|
| 8. The Scope-of-Work for the proposed project is one of the following: | <u>X</u> | <input type="checkbox"/> |
| a) <u>Improved traffic operation;</u> | | |
| b) <u>Safety improvements;</u> | | |
| c) 3R; | | |
| d) Bridge replacement on essentially the same alignment; or | | |
| e) <u>Addition of lanes. (Left turn lanes and four-lane passing areas will be provided with this project).</u> | | |

ALTERNATIVES CONSIDERED

- | | <u>YES</u> | <u>NO</u> |
|--|------------|--------------------------|
| 1. The "do-nothing" ALTERNATIVE has been evaluated, and is <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>The existing highway has physical deficiencies that contribute to reduced safety for users of U.S. Highway 287. The road's substandard width, steep roadsides, and presence of obstructions within the clear zone are related to the design of the road and can be corrected only by reconstruction.</i> | | |
| 2. An ALTERNATIVE has been evaluated on the existing alignment which improves the highway without any 4(f) impacts, and is also <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>Rebuilding U.S. Highway 287 on the existing alignment would be possible. However, the Montana Ditch would still be crossed by the new highway.</i> | | |
| 3. An ALTERNATIVE on a new location avoiding the 4(f) site has been evaluated, and is <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>Shifting the alignment east or west of the existing highway would also require crossings of this irrigation ditch. Shifting the highway to the east would place the new highway less than 120 feet from the centerline of Montana Rail Link's mainline track, eliminating the ability to provide storage between the highway and the railroad for a tractor-trailer combination attempting to cross the rail line. Shifting the road substantially to the east would result in extensive impacts to roadside wetlands, convert large areas of important farmland and agricultural land, disrupt existing irrigation systems, and require significant new right-of-way acquisition.</i> | | |

MINIMIZATION OF HARM

- | | <u>YES</u> | <u>NO</u> |
|--|------------|--------------------------|
| 1. The proposed project includes all possible planning to minimize harm. | <u>X</u> | <input type="checkbox"/> |
| 2. Measures to minimize harm include the following: | <u>X</u> | <input type="checkbox"/> |
| <i>The alignment of the new highway is offset slightly to the east of the existing road's alignment in the vicinity of the Montana Ditch crossing thereby minimizing impacts to this historic irrigation feature.</i> | | |

COORDINATION

- | | <u>YES</u> | <u>NO</u> |
|--|------------|--------------------------|
| 1. The proposed project has been COORDINATED with the following: | | |
| a) SHPO
<i>July 28, 2003 – Concurrence with MDT NHRP-eligibility determinations</i>
<i>April 13, 2005 – Concurrence with No Adverse Effect determination</i> | <u>X</u> | <input type="checkbox"/> |
| b) ADVISORY COUNCIL ON HISTORIC PRESERVATION | <u>X</u> | <input type="checkbox"/> |
| c) Property owners
<i>Public Information Meeting – June 28, 2002</i> | <u>X</u> | <input type="checkbox"/> |
| d) Local/State/Federal agencies | <u>X</u> | <input type="checkbox"/> |

2. One of the preceding had the following comment(s) regarding this proposed project, and/or the mitigation:

No comments received.

SUMMARY


The proposed action is preferred because the No Build Alternative does not satisfy the specified purpose and need for improving U.S. Highway 287 south of Townsend. The No Build Alternative does not meet the traveling public's needs because it does not address the substandard surface width associated with the road and its bridges and does not eliminate or reduce other identified conditions that contribute to safety and operation problems on the existing roadway. The No Build Alternative does not provide a traffic facility consistent with all MDT design standards for Rural Principal Arterials Montana's National Highway System.

Rebuilding the road on an alignment similar to that of the existing highway could be accomplished, however, this alternative would not avoid minor effects to the Montana Ditch and would result in an unacceptable encroachment on the nearby Montana Rail Link railroad main line. Similarly, shifting the alignment of U.S. Highway 287 significantly to the east or west of the present highway would also require crossings of this historic ditch or affect facilities associated with other irrigation systems in the area. The design and location alternatives considered for this proposed project are described in Part 3.0 of the EA. Therefore, no feasible and prudent alternatives exist to avoid the minor effects associated with reconstructing U.S. Highway 287 in the vicinity of the Montana Ditch (24BW729).

The proposed action meets all criteria regarding the required **Alternatives, Coordination, and Measures to Minimize Harm**. All possible planning to minimize harm to the identified irrigation ditches has been undertaken and will be incorporated in this proposed project. This proposed project therefore complies with the December 23, 1986 Final Nationwide *Section 4(f)* Evaluation by the U.S. DEPARTMENT OF TRANSPORTATION's Federal Highway Administration.

APPROVAL

This document is submitted pursuant to **49 U.S.C. 303** and in accordance with the provisions of **16 U.S.C. 470f**.



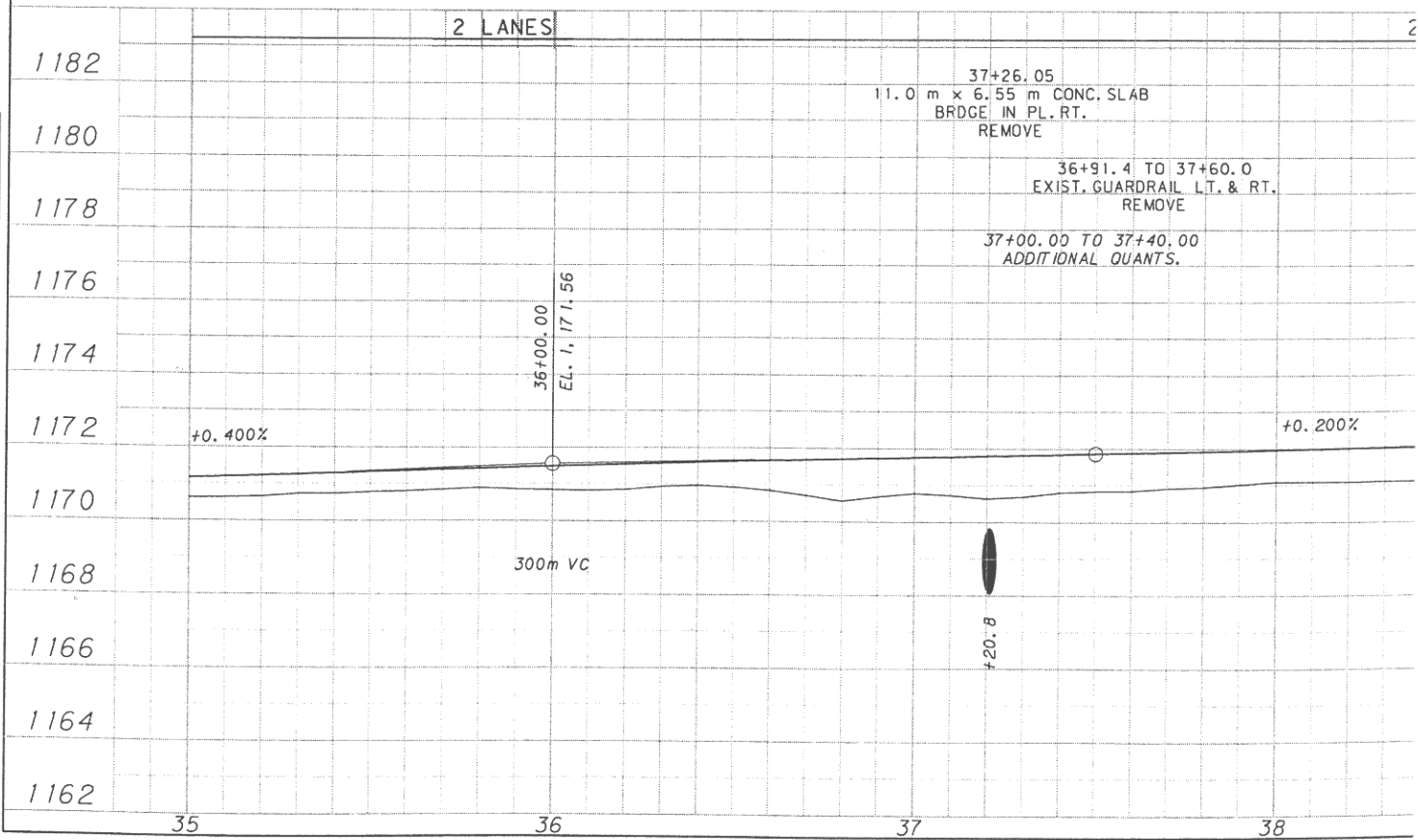
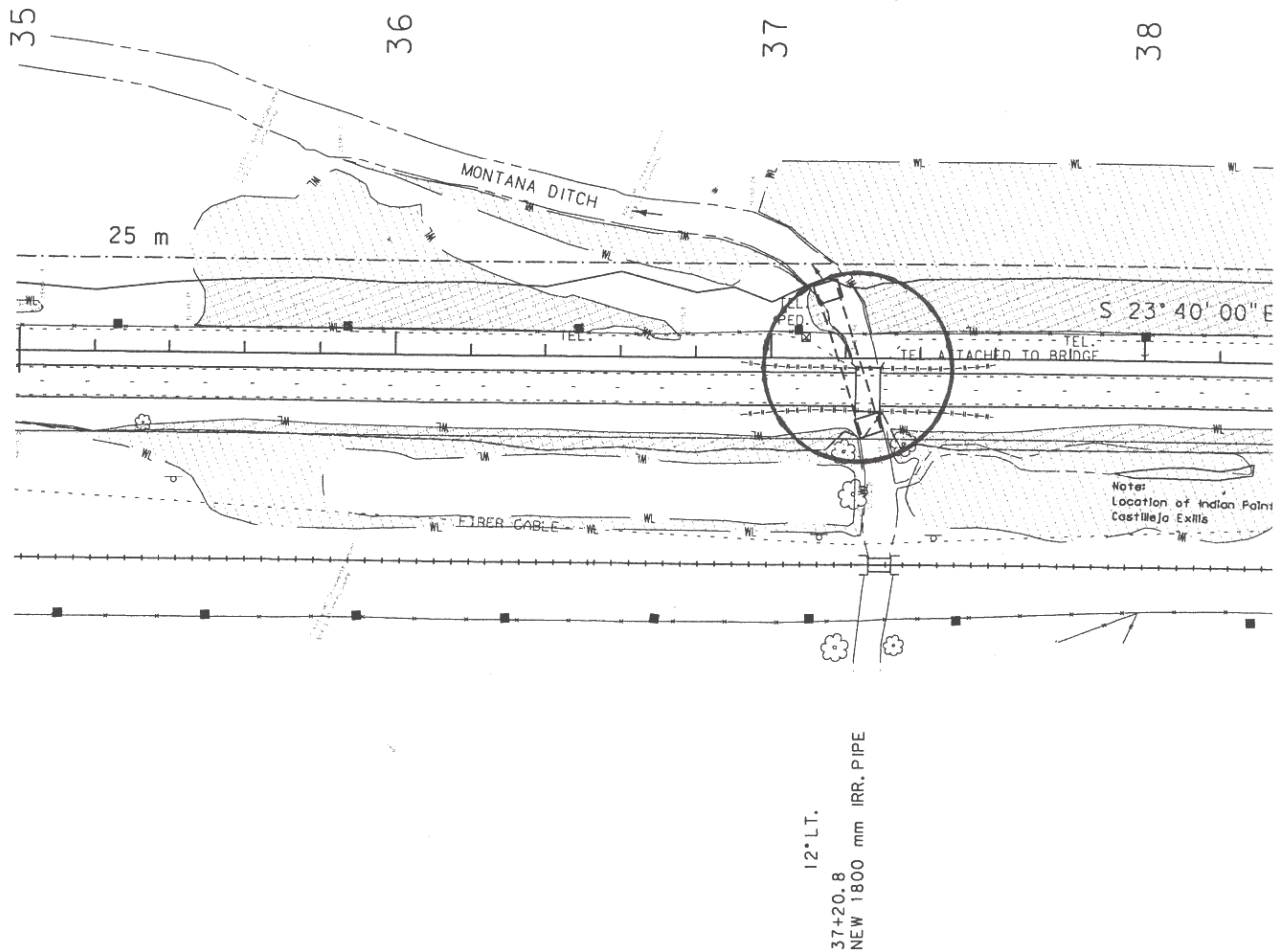
Thomas L. Hansen, P.E., Supervisor
Engineering Section
MDT Environmental Services

Date: 9/26/05

Approved: Jeffrey A. Patten
Federal Highway Administration

Date: Oct 6, 2005

Montana Ditch (24BW729)



MONTANA DIVISION
"NATIONWIDE" SECTION 4(f) EVALUATION FOR MINOR IMPACTS
ON
HISTORIC SITES
EXCLUDING HISTORIC BRIDGE REPLACEMENTS

Project # NH-F 8-4 (16) 78 F, (C.N. #1420)

Date: August 1, 2005

Project Name: TOWNSEND-SOUTH

Location: Broadwater-Missouri Diversion Project
East Side Canal Overflow Channel (24BW837)
Broadwater County, Montana

The Broadwater-Missouri Diversion Project (24BW837) is a large irrigation system with four associated features: the Toston Dam, the Main Canal, the West Side Canal, and the East Side Canal. None of these features is located within the project area; however, an overflow channel associated with the East Side Canal crosses the highway in the northern portion of the project corridor at about RP 80.6. The Broadwater-Missouri Diversion Project was constructed in 1941 and has been in continual use since that time. The irrigation system is owned and maintained by the State Water Projects Bureau of the Montana Department of Natural Resources and Conservation. The ditch is privately owned and is still used for irrigation. A map showing the location of the overflow channel associated with the East Side Canal is provided in Part 4.0 of the EA.

Reconstruction of U.S. Highway 287 will cross the overflow channel associated with the East Side Canal. In the vicinity of this crossing, the centerline of the new road will be shifted slightly east of the existing highway and the road widened to accommodate a new four-lane passing area. The project will install a new concrete or metal culvert beneath the road and require minor revisions to the alignment of the overflow channel at the highway crossing.

NOTE: Any response in a box requires additional information. Consult the "Nationwide" Section 4(f) Evaluation criteria.

- | | <u>YES</u> | <u>NO</u> |
|--|--|--|
| 1. Is the 4(f) site adjacent to the existing highway? | <u><input checked="" type="checkbox"/></u> | <input type="checkbox"/> |
| 2. Does the proposed project require the removal or alteration of historic structures, and/or objects? | <input type="checkbox"/> | <u><input checked="" type="checkbox"/></u> |
| 3. Does the proposed project disturb or remove archaeological resources which are important to preserve in-place rather than to recover? | <input type="checkbox"/> | <u><input checked="" type="checkbox"/></u> |
| 4. Is the impact on the 4(f) site considered minor (i.e.: no effect; or no adverse effect)? <i>There would be no adverse effect to 24BW837.</i> | <u><input checked="" type="checkbox"/></u> | <input type="checkbox"/> |
| 5. Has the STATE HISTORIC PRESERVATION OFFICE (SHPO) agreed in writing with the assessment of impacts, and the proposed mitigation? | <u><input checked="" type="checkbox"/></u> | <input type="checkbox"/> |
| 6. Is the proposed action under an <u>Environmental Impact Statement (E.I.S.)</u> ? | <input type="checkbox"/> | <u><input checked="" type="checkbox"/></u> |
| 7. Is the proposed project on a new location?
<i>The centerline of the new road will be shifted slightly to the east near the East Side Canal overflow channel highway crossing. Widening will occur along the east (left) side of the existing roadway due to the proximity of the Montana Rail Link railroad line throughout the corridor.</i> | <input type="checkbox"/> | <u><input checked="" type="checkbox"/></u> |
| 8. The Scope-of-Work for the proposed project is one of the following: | <u><input checked="" type="checkbox"/></u> | <input type="checkbox"/> |
| a) <u>Improved traffic operation;</u> | | |
| b) <u>Safety improvements;</u> | | |
| c) 3R; | | |
| d) Bridge replacement on essentially the same alignment; or | | |
| e) <u>Addition of lanes. (Left turn lanes and four-lane passing areas will be provided with this project).</u> | | |

ALTERNATIVES CONSIDERED

- | | <u>YES</u> | <u>NO</u> |
|---|-------------------|--------------------------|
| 1. The "do-nothing" ALTERNATIVE has been evaluated, and is <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>The existing highway has physical deficiencies that contribute to reduced safety for users of U.S. Highway 287. The road's substandard width, steep roadsides, and presence of obstructions within the clear zone are related to the design of the road and can be corrected only by reconstruction.</i> | | |
| 2. An ALTERNATIVE has been evaluated on the existing alignment which improves the highway without any 4(f) impacts, and is also <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>Rebuilding U.S. Highway 287 on the existing alignment would be possible. However, the overflow channel would still be crossed by the new highway.</i> | | |
| 3. An ALTERNATIVE on a new location avoiding the 4(f) site has been evaluated, and is <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>Shifting the alignment east or west of the existing highway would also require crossings of this overflow channel. Shifting the highway to the east would place the new highway less than 120 feet from the centerline of Montana Rail Link's mainline track, eliminating the ability to provide storage between the highway and the railroad for a tractor-trailer combination attempting to cross the rail line. Shifting the road substantially to the east would result in extensive impacts to roadside wetlands, convert large areas of important farmland and agricultural land, disrupt existing irrigation systems, and require significant new right-of-way acquisition.</i> | | |

MINIMIZATION OF HARM

- | | <u>YES</u> | <u>NO</u> |
|---|-------------------|--------------------------|
| 1. The proposed project includes all possible planning to minimize harm. | <u>X</u> | <input type="checkbox"/> |
| 2. Measures to minimize harm include the following: | <u>X</u> | <input type="checkbox"/> |
| <i>The alignment of the new highway is offset slightly to the east of the existing road's alignment in the vicinity of the Montana Ditch crossing thereby minimizing impacts to this historic irrigation feature.</i> | | |

COORDINATION

- | | <u>YES</u> | <u>NO</u> |
|--|-------------------|--------------------------|
| 1. The proposed project has been COORDINATED with the following: | | |
| a) SHPO
<i>July 28, 2003 – Concurrence with MDT NHRP-eligibility determinations</i>
<i>April 13, 2005 – Concurrence with No Adverse Effect determination</i> | <u>X</u> | <input type="checkbox"/> |
| b) ADVISORY COUNCIL ON HISTORIC PRESERVATION | <u>X</u> | <input type="checkbox"/> |
| c) Property owners
<i>Public Information Meeting – June 28, 2002</i> | <u>X</u> | <input type="checkbox"/> |
| d) Local/State/Federal agencies | <u>X</u> | <input type="checkbox"/> |
| 2. One of the preceding had the following comment(s) regarding this proposed project, and/or the mitigation: | | |

No comments received.

SUMMARY

The proposed action is preferred because the No Build Alternative does not satisfy the specified purpose and need for improving U.S. Highway 287 south of Townsend. The No Build Alternative does not meet the traveling public's needs because it does not address the substandard surface width associated with the road and its bridges and does not eliminate or reduce other identified conditions that contribute to safety and operation problems on the existing roadway. The No Build Alternative does not provide a traffic facility consistent with all MDT design standards for Rural Principal Arterials Montana's National Highway System.

Rebuilding the road on an alignment similar to that of the existing highway could be accomplished, however, this alternative would not avoid minor effects to the overflow channel associated with the East Side Canal and would result in an unacceptable encroachment on the nearby Montana Rail Link railroad main line. Similarly, shifting the alignment of U.S. Highway 287 significantly to the east or west of the present highway would also require crossings of this historic ditch or affect facilities associated with other irrigation systems in the area. The design and location alternatives considered for this proposed project are described in Part 3.0 of the EA. Therefore, no feasible and prudent alternatives exist to avoid the minor effects associated with reconstructing U.S. Highway 287 in the vicinity of the overflow channel associated with the East Side Canal of the Broadwater-Missouri Diversion Project (24BW837).

The proposed action meets all criteria regarding the required **Alternatives, Coordination, and Measures to Minimize Harm**. All possible planning to minimize harm to the identified irrigation ditches has been undertaken and will be incorporated in this proposed project. This proposed project therefore complies with the December 23, 1986 Final Nationwide *Section 4(f)* Evaluation by the U.S. DEPARTMENT OF TRANSPORTATION's Federal Highway Administration.

APPROVAL

This document is submitted pursuant to **49 U.S.C. 303** and in accordance with the provisions of **16 U.S.C. 470f**.



Thomas L. Hansen, P.E., Supervisor
Engineering Section
MDT Environmental Services

Date: 9/26/05

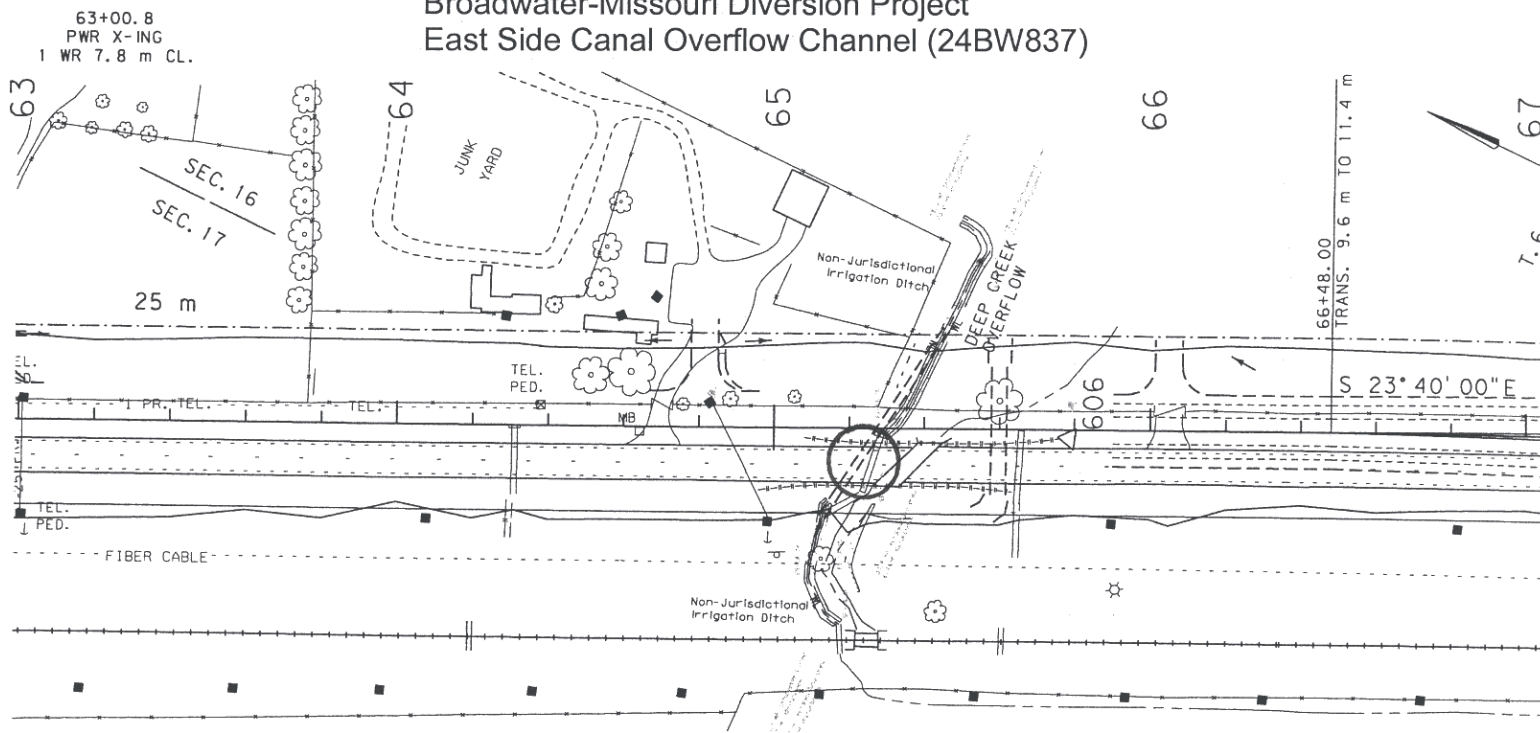
Approved: _____



Federal Highway Administration

Date: Oct 6, 2005

Broadwater-Missouri Diversion Project East Side Canal Overflow Channel (24BW837)



64+31.0 RCP &
457 mm CMP IRR. IN PL.
REMOVE

65+27.8 RCP &
610 mm CMP IRR. IN PL.
REMOVE
65+28.3 NEW 600 mm IRR. PIPE

65+60.0 NEW 2100 mm CSP-STOCKPASS
CRITTER CROSSING
65+65.4 RCP &
610 mm CMP IRR. IN PL.
REMOVE

4 LANES
64+81.4 PRNATE APP. LT.
INCL. MAILBOX TURNOUT

64+64.4 MAILBOX IN PL. LT.

65+35.60 11.6 m x 6.71 m CONC. SLAB
BRIDGE IN PL. RT.
REMOVE

64+96.0 TO 65+64.6 RT. &
65+07.2 TO 65+75.8 LT.
EXIST. GUARDRAIL
REMOVE

65+60.0 INLET & OUTLET DITCH

66+04.8 FARM FIELD APP. LT.

-0.100%

+28.3

+60.0

TRANS
4 LANES T

MONTANA DIVISION
"NATIONWIDE" SECTION 4(f) EVALUATION FOR MINOR IMPACTS
ON
HISTORIC SITES
EXCLUDING HISTORIC BRIDGE REPLACEMENTS

Project # NH-F 8-4 (16) 78 F, (C.N. #1420)

Date: August 1, 2005

Project Name: TOWNSEND-SOUTH

Location: Big Springs (Hanson) Ditch (24BW836)
Broadwater County, Montana

The Big Springs (or Hanson) Ditch (24BW836) is a historic irrigation feature crossed by U.S Highway 287 at RP 85.8 near the south end of the Townsend-South project corridor. The Big Springs Ditch, consisting of an unlined earthen canal that begins at Big Springs south of Toston and runs about 9 miles along the east side of the Missouri River before discharging into Dry Creek. The first water rights for the ditch were filed in 1872 and were likely associated with early agriculture and mining uses in the area. The ditch is privately owned and is still used for irrigation. A map showing the location of the Big Springs Ditch is provided in Part 4.0 of the EA.

Reconstruction of U.S. Highway 287 will affect the Big Springs Ditch where the present road crosses the irrigation facility. In the vicinity of this crossing, the centerline of the new road will be shifted to the east shoulder of the existing highway and the road widened to accommodate a new four-lane passing area. The project will install a new concrete or metal culvert beneath the road and make revise the alignment of the canal on both the east and west sides of the road at the Big Springs Ditch crossing.

NOTE: Any response in a box requires additional information. Consult the "Nationwide" Section 4(f) Evaluation criteria.

- | | <u>YES</u> | <u>NO</u> |
|--|--|--|
| 1. Is the 4(f) site adjacent to the existing highway? | <u><input checked="" type="checkbox"/></u> | <input type="checkbox"/> |
| 2. Does the proposed project require the removal or alteration of historic structures, and/or objects? | <input type="checkbox"/> | <u><input checked="" type="checkbox"/></u> |
| 3. Does the proposed project disturb or remove archaeological resources which are important to preserve in-place rather than to recover? | <input type="checkbox"/> | <u><input checked="" type="checkbox"/></u> |
| 4. Is the impact on the 4(f) site considered minor (i.e.: no effect; or no adverse effect)? <i>There would be no adverse effect to 24BW836.</i> | <u><input checked="" type="checkbox"/></u> | <input type="checkbox"/> |
| 5. Has the STATE HISTORIC PRESERVATION OFFICE (SHPO) agreed in writing with the assessment of impacts, and the proposed mitigation? | <u><input checked="" type="checkbox"/></u> | <input type="checkbox"/> |
| 6. Is the proposed action under an <u>Environmental Impact Statement (E.I.S.)</u> ? | <input type="checkbox"/> | <u><input checked="" type="checkbox"/></u> |
| 7. Is the proposed project on a new location? | <input type="checkbox"/> | <u><input checked="" type="checkbox"/></u> |

The centerline of the new road will be shifted slightly to the east shoulder of the existing road near the Big Springs Ditch highway crossing. Widening will occur along the east (left) side of the existing roadway due to the proximity of the Montana Rail Link railroad line throughout the corridor.

- | | | |
|---|--|--------------------------|
| 8. The Scope-of-Work for the proposed project is one of the following: | <u><input checked="" type="checkbox"/></u> | <input type="checkbox"/> |
| a) <u>Improved traffic operation;</u> | | |
| b) <u>Safety improvements;</u> | | |
| c) 3R; | | |
| d) Bridge replacement on essentially the same alignment; or | | |
| e) <u>Addition of lanes. (Left turn lanes and four-lane passing areas will be provided with this project).</u> | | |

ALTERNATIVES CONSIDERED

- | | <u>YES</u> | <u>NO</u> |
|---|------------|--------------------------|
| 1. The "do-nothing" ALTERNATIVE has been evaluated, and is <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>The existing highway has physical deficiencies that contribute to reduced safety for users of U.S. Highway 287. The road's substandard width, steep roadsides, and presence of obstructions within the clear zone are related to the design of the road and can be corrected only by reconstruction.</i> | | |
| 2. An ALTERNATIVE has been evaluated on the existing alignment which improves the highway without any 4(f) impacts, and is also <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>Rebuilding U.S. Highway 287 on the existing alignment would be possible. However, the identified ditches would still be crossed by the new highway.</i> | | |
| 3. An ALTERNATIVE on a new location avoiding the 4(f) site has been evaluated, and is <u>not</u> considered to be feasible and prudent. (SEE Part 3.0 of the EA) | <u>X</u> | <input type="checkbox"/> |
| <i>Shifting the alignment east or west of the existing highway would also require crossing this irrigation ditch. Shifting the highway to the east would place the new highway less than 120 feet from the centerline of Montana Rail Link's mainline track, eliminating the ability to provide storage between the highway and the railroad for a tractor-trailer combination attempting to cross the rail line. Shifting the road substantially to the east would result in extensive impacts to roadside wetlands, convert large areas of important farmland and agricultural land, disrupt existing irrigation systems, and require significant new right-of-way acquisition.</i> | | |

MINIMIZATION OF HARM

- | | <u>YES</u> | <u>NO</u> |
|--|------------|--------------------------|
| 1. The proposed project includes all possible planning to minimize harm. | <u>X</u> | <input type="checkbox"/> |
| 2. Measures to minimize harm include the following: | <u>X</u> | <input type="checkbox"/> |
| <i>The alignment of the new highway will follow the existing road's alignment in the vicinity of these irrigation ditch crossings thereby minimizing impacts to this historic feature.</i> | | |

COORDINATION

- | | <u>YES</u> | <u>NO</u> |
|--|------------|--------------------------|
| 1. The proposed project has been COORDINATED with the following: | | |
| a) SHPO
<i>July 28, 2003 – Concurrence with MDT NHRP-eligibility determinations
April 13, 2005 – Concurrence with No Adverse Effect determination</i> | <u>X</u> | <input type="checkbox"/> |
| b) ADVISORY COUNCIL ON HISTORIC PRESERVATION | <u>X</u> | <input type="checkbox"/> |
| c) Property owners
<i>Public Information Meeting – June 28, 2002</i> | <u>X</u> | <input type="checkbox"/> |
| d) Local/State/Federal agencies | <u>X</u> | <input type="checkbox"/> |

2. One of the preceding had the following comment(s) regarding this proposed project, and/or the mitigation:

No comments received.

SUMMARY

The proposed action is preferred because the No Build Alternative does not satisfy the specified purpose and need for improving U.S. Highway 287 south of Townsend. The No Build Alternative does not meet the traveling public's needs because it does not address the substandard surface width associated with the road and its bridges and does not eliminate or reduce other identified conditions that contribute to safety and operation problems on the existing roadway. The No Build Alternative does not provide a traffic facility consistent with all MDT design standards for Rural Principal Arterials Montana's National Highway System.

Rebuilding the road on an alignment similar to that of the existing highway could be accomplished, however, this alternative would not avoid minor effects to the Big Springs Ditch and would result in an unacceptable encroachment on the nearby Montana Rail Link railroad main line. Similarly, shifting the alignment of U.S. Highway 287 significantly to the east or west of the present highway would also require crossings of this historic ditch or affect facilities associated with other irrigation systems in the area. The design and location alternatives considered for this proposed project are described in Part 3.0 of the EA. Therefore, no feasible and prudent alternatives exist to avoid the minor effects associated with reconstructing U.S. Highway 287 in the vicinity of the Big Springs Ditch (24BW836).

The proposed action meets all criteria regarding the required **Alternatives, Coordination, and Measures to Minimize Harm**. All possible planning to minimize harm to the identified irrigation ditches has been undertaken and will be incorporated in this proposed project. This proposed project therefore complies with the December 23, 1986 Final Nationwide *Section 4(f)* Evaluation by the U.S. DEPARTMENT OF TRANSPORTATION's Federal Highway Administration.

APPROVAL

This document is submitted pursuant to **49 U.S.C. 303** and in accordance with the provisions of **16 U.S.C. 470f**.



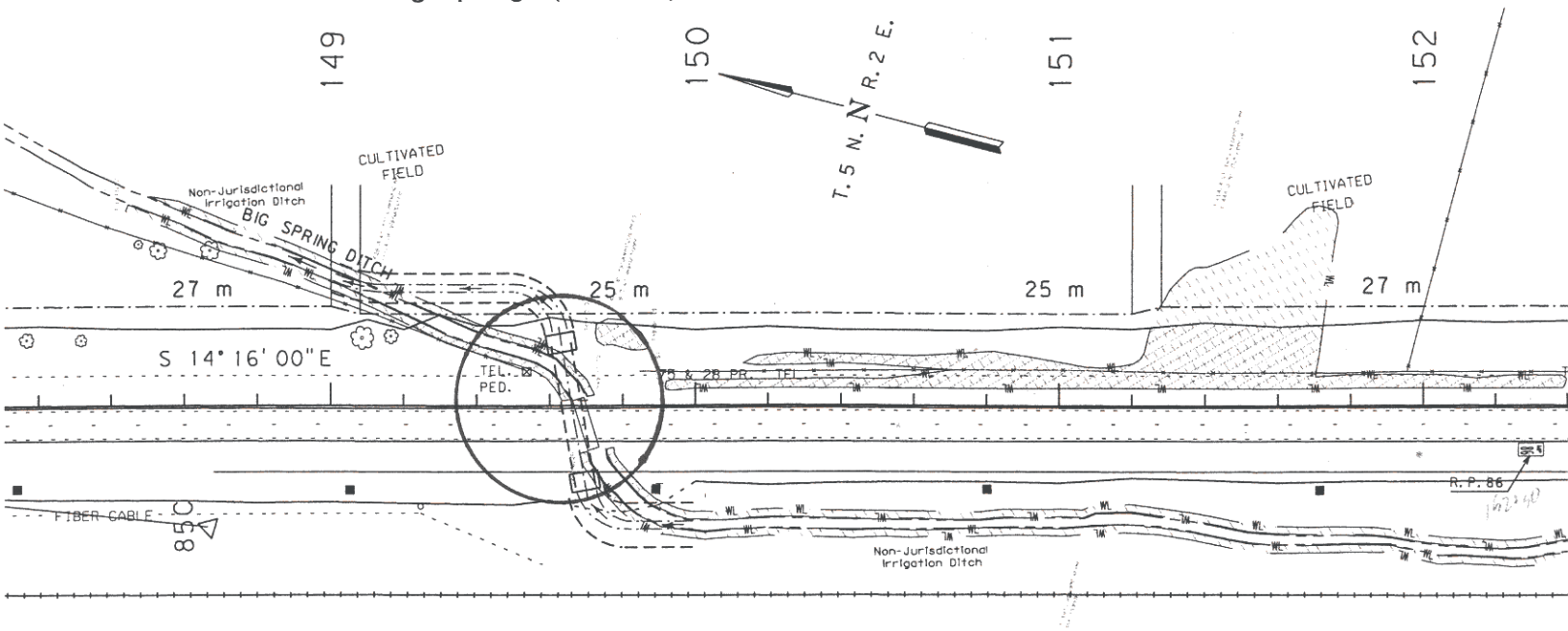
Thomas L. Hansen, P.E., Supervisor
Engineering Section
MDT Environmental Services

Date: 9/26/05

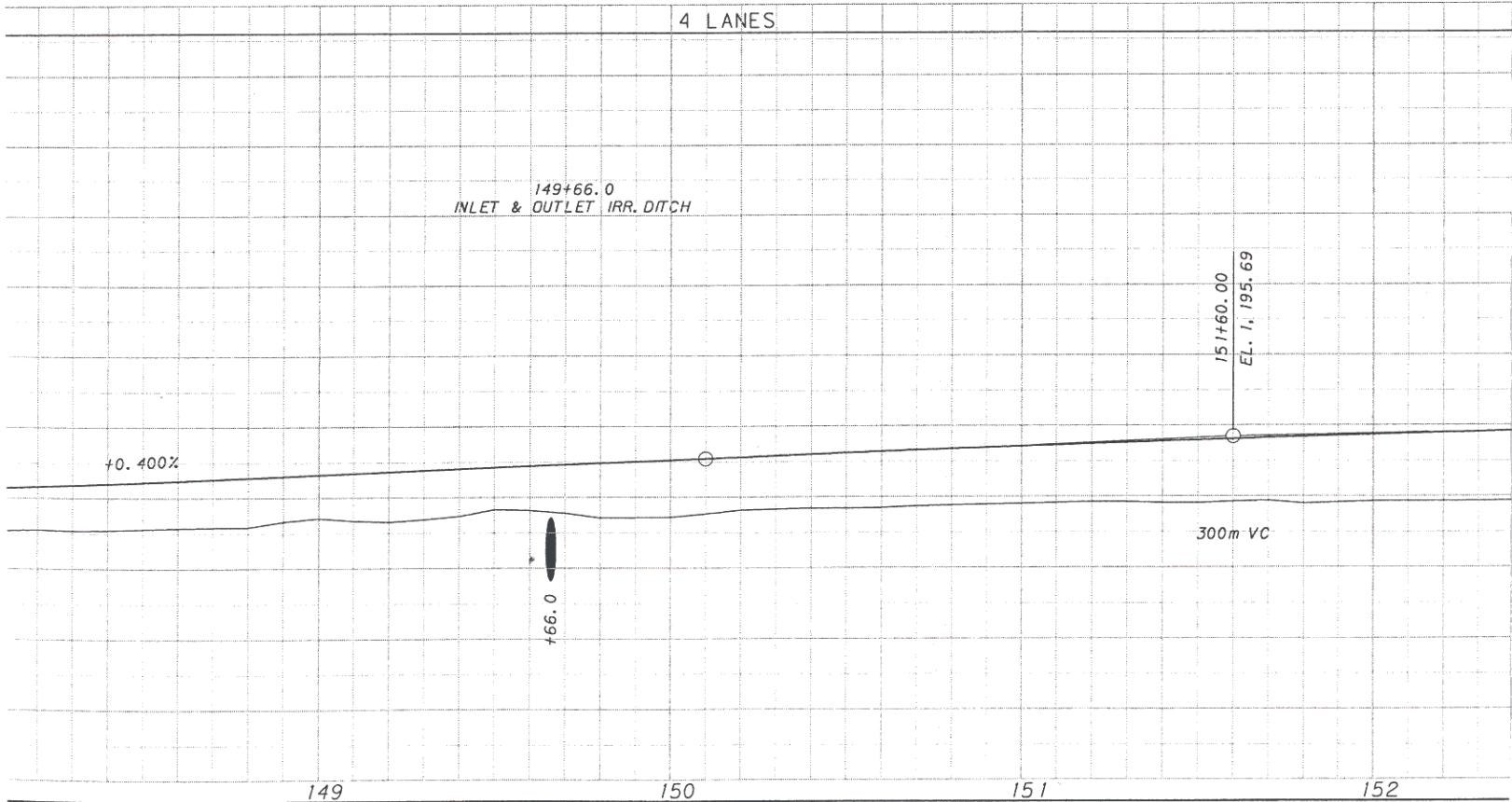
Approved: Jeffrey A. Patten
Federal Highway Administration

Date: Oct 6, 2005

Big Springs (Hanson) Ditch (24BW836)



149+66.0
NEW 1800 mm IRR. PIPE
149+69.2
914 mm x 2.3 m
CONC. BOX IRR IN PL.
REMOVE



Final Nationwide Section 4(f) Evaluation and Approval for Federally-Aided Highway Projects with Minor Involvements with Historic Sites

This programmatic Section 4(f) evaluation has been prepared for projects which improve existing highways and use minor amounts of land (including non-historic improvements thereon) from historic sites that are adjacent to existing highways. This programmatic Section 4(f) evaluation satisfies the requirements of Section 4(f) for all projects that meet the applicability criteria listed below. No individual Section 4(f) evaluations need be prepared for such projects. (Note a similar programmatic Section 4(f) evaluation has been prepared for projects which use minor amounts of publicly owned public parks, recreation lands, or wildlife and waterfowl refuges).

The FHWA Division Administrator is responsible for reviewing each individual project to determine that it meets the criteria and procedures of this programmatic Section 4(f) evaluation. The Division Administrator's determinations will be thorough and will clearly document the items that have been reviewed. The written analysis and determinations will be combined in a single document and placed in the project record and will be made available to the public upon request. This programmatic evaluation will not change the existing procedures for project compliance with the National Environmental Policy Act (NEPA) or with public involvement requirements.

Applicability

This programmatic Section 4(f) evaluation may be applied by FHWA only to projects meeting the following criteria:

1. The proposed project is designed to improve the operational characteristics, safety, and/or physical condition of existing highway facilities on essentially the same alignment. This includes "4R" work (resurfacing, restoration, rehabilitation and reconstruction); safety improvements, such as shoulder widening and the correction of substandard curves and intersections; traffic operation improvements, such as signalization, channelization, and turning or climbing lanes; bicycle and pedestrian facilities; bridge replacements on essentially the same alignment, and the construction of additional lanes. This programmatic Section 4(f) evaluation does not apply to the construction of a highway on a new location.
2. The historic site involved is located adjacent to the existing highway.
3. The project does not require the removal or alteration of historic buildings, structures or objects on the historic site.
4. The project does not require the disturbance or removal of archeological resources that are important to preserve in place rather than to remove for archeological research. The determination of the importance to preserve in place will be based on consultation with the State Historic Preservation Officer (SHPO) and, if appropriate, the Advisory Council on Historic Preservation (ACHP).
5. The impact on the Section 4(f) site resulting from the use of the land must be considered minor. The word minor is narrowly defined as having either a "no effect" or "no adverse effect" (when applying the requirements of Section 206 of the National Historic Preservation Act and 36 CFR Part 800) on the qualities which qualified the site for listing or eligibility on the National Register of Historic Places. The ACHP must not object to the determination of "no adverse effect."
6. The SHPO must agree, in writing, with the assessment of impacts of the proposed project on and the proposed mitigation for the historic sites.
7. This programmatic evaluation does not apply to projects for which an environmental impact statement (EIS) is prepared, unless the use of Section 4(f) lands is discovered after the approval of the final EIS.

Should any of the above criteria not be met, this programmatic Section 4(f) evaluation cannot be used, and an individual Section 4(f) evaluation must be prepared.

Alternatives

The following alternatives avoid any use of the historic site.

1. Do nothing.
2. Improve the highway without using the adjacent historic site.
3. Build an improved facility on new location without using the historic site.

This list is intended to be all-inclusive. The programmatic Section 4(f) evaluation does not apply if a feasible and prudent alternative is identified that is not discussed in this document. The project record must clearly demonstrate that each of the above alternatives was fully evaluated before the FHWA Division Administrator concluded that the programmatic Section 4(f) evaluation applied to the project.

Findings

In order for this programmatic Section 4(f) evaluation to be applied to a project, each of the following findings must be supported by the circumstances, studies, and consultations on the project:

1. **Do Nothing Alternative.** The Do Nothing Alternative is not feasible and prudent because: (a) it would not correct existing or projected capacity deficiencies or (b) it would not correct existing safety hazards; or (c) it would not correct existing deteriorated conditions and maintenance problems; **and** (d) not providing such correction would constitute a cost or community impact of extraordinary magnitude, or would result in truly unusual or unique problems, when compared with the proposed use of the Section 4(f) lands.
2. **Improvement without Using the Adjacent Section 4(f) Lands.** It is not feasible and prudent to avoid Section 4(f) lands by roadway design or transportation system management techniques (including, but not limited to, minor alignment shifts, changes in geometric design standards, use of retaining walls and/or other structures, and traffic diversions or other traffic management measures) because implementing such measures would result in: (a) substantial adverse community impacts to adjacent homes, businesses or other improved properties; **or** (b) substantially increased roadway or structure cost; **or** (c) unique engineering, traffic, maintenance, or safety problems; **or** (d) substantial adverse social, economic, or environmental impacts; or (e) the project not meeting identified transportation needs; and (f) the impacts, costs, or problems would be truly unusual or unique, or of extraordinary magnitude when compared with the proposed use of Section 4(f) lands. Flexibility in the application of American Association (page 4) of State Highway and Transportation officials (AASHTO) geometric standards should be exercised, as permitted in 23 CFR 625, during the analysis of this alternative.
3. **Alternatives on New Location.** It is not feasible and prudent to avoid Section 4(f) lands by constructing on new alignment because (a) the new location would not solve existing transportation safety or maintenance problems; **or** (b) the new location would result in substantial adverse social, economic, or environmental impacts (including such impacts as extensive severing of productive farmlands, displacement of a substantial number of families or businesses, serious disruption of established travel patterns, substantial damage to wetlands or other sensitive natural areas, or greater impacts to other Section 4(f) lands); or (c) the new location would substantially increase costs or engineering difficulties (such as an inability to achieve minimum design standards, or to meet the requirements of various permitting agencies such as those involved with navigation, pollution, and the environment); **and** (d) such problems, impacts, costs, or difficulties would be truly unusual or unique, or of extraordinary magnitude when compared with the proposed use of Section 4(f) lands. Flexibility in the application of AASHTO geometric standards should be exercised, as permitted in 23 CFR 625, during the analysis of this alternative.

Measures to Minimize Harm

This programmatic Section 4(f) evaluation and approval may be used only for projects where the FHWA Division Administrator, in accordance with this evaluation, ensures that the proposed action includes all possible planning to minimize harm. Measures to minimize harm will consist of those measures necessary to preserve the historic integrity of the site and agreed to, in accordance with 36 CFR Part 800 by the FHWA, the SHPO, and as appropriate, the ACHP.

Coordination

The use of this programmatic evaluation and approval is conditioned upon the satisfactory completion of coordination with the SHPO, the ACHP, and interested persons as called for in 36 CFR Part 800. Coordination with interested persons, such as the local government, the property owner, a local historical society, or an Indian tribe, can facilitate in the evaluation of the historic resource values and mitigation proposals and is therefore highly encouraged.

For historic sites encumbered with Federal interests, coordination is required with the Federal agencies responsible for the encumbrances.

Before applying this programmatic evaluation to projects requiring an individual bridge permit, the Division Administrator shall coordinate with the U.S. Coast Guard District Commander.

Approval Procedure

This programmatic Section 4(f) approval applies only after the FHWA Division Administrator has:

1. Determined that the project meets the applicability criteria set forth above;
2. Determined that all of the alternatives set forth in the Findings section have been fully evaluated;
3. Determined that the findings in this document (which conclude that there are no feasible and prudent alternatives to the use of land from or non-historic improvements on the historic site) are clearly applicable to the project;
4. Determined that the project complies with the Measures to Minimize Harm section of this document;
5. Determined that the coordination called for in this programmatic evaluation has been successfully completed;
6. Assured that the measures to minimize harm will be incorporated in the project; and
7. Documented the project file clearly identifying the basis for the above determinations and assurances.

Issued on: 12/23/1986 Approved: /Original Signed By/ Ali F. Sevin, Director Office of Environmental Policy Federal Highway Administration

MONTANA DIVISION

"NATIONWIDE" PROGRAMMATIC SECTION 4(f) EVALUATION FOR HISTORIC BRIDGES

Project # NH-F 8-4 (16) 78 F, (C.N. #1420)
 Project Name: TOWNSEND-SOUTH

Date: August 1, 2005
 Location: Montana Ditch Bridge (24BW956)
Broadwater County, Montana

The Townsend-South project will reconstruct 13.2 km (8.0 miles) of U. S. Highway 287 beginning immediately south of the City of Townsend at RP 78.1 and ending north of Toston at RP 86.1. The project will be reconstructed to closely follow the existing alignment and will generally provide a two-lane highway with wide shoulders, auxiliary turn lanes, and one or more four-lane passing sections to improve the facility's operation and safety. The project crosses the Montana Ditch (a historic irrigation system dating to around 1900) at RP 78.9 and will impact the Montana Ditch Bridge (24BW956). The Montana Ditch Bridge is a 10.97 m (36 feet) wide by 7.01 m (23 feet) long single-span, cast-in-place reinforced concrete slab structure built in 1931 and reconstructed in 1939. The bridge has been evaluated by MDT and determined eligible for the National Register of Historic Places (NHRP) under Criterion C as an excellent example of a 1930's concrete slab bridge.

Reconstruction of U.S. Highway 287 will require the removal of the Montana Ditch Bridge. Although the existing bridge is not structurally deficient, the Montana Ditch Bridge is not wide enough to accommodate road widening to at least 12.0 m (about 40 feet). The existing bridge will be replaced with new concrete pipe or box culvert.

A map showing the location of the 24BW956 is attached.

NOTE: Any response in a box will require additional information, and may result in an individual evaluation/statement.

	<u>YES</u>	<u>NO</u>
1. Is the bridge a NATIONAL HISTORIC LANDMARK?	<input type="checkbox"/>	<u>X</u>
2. Have agreements been reached through the procedures pursuant to <i>Section 106</i> of the <i>National Historic Preservation Act (NHPA)</i> with the following:		
STATE HISTORIC PRESERVATION OFFICE (SHPO)?	<u>X</u>	<input type="checkbox"/>
ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP)?	<u>X</u>	<input type="checkbox"/>
<i>MDT's historic roads and bridges Programmatic Agreement with the FHWA, the SHPO, and ACHP was enacted in 1997 in lieu of regular procedures for compliance with Section 106 of the NATIONAL HISTORIC PRESERVATION ACT as applied only to historic roads and bridges in Montana.</i>		
3. Any other agency/ies with jurisdiction at this location?	<u>X</u>	—
a) If "YES" will additional approval(s) for this <i>Section 4(f)</i> application be required?	<input type="checkbox"/>	<u>X</u>
b) List of agencies with jurisdiction at this location:		
USA - CORPS OF ENGINEERS (<i>Section 404</i> Permit) – <i>jurisdictional wetlands</i>	<u>X</u>	—
USDA - Forest Service	<input type="checkbox"/>	<u>X</u>
USDA - Natural Resources Conservation Service (<i>FPPA</i>)	<input type="checkbox"/>	<u>X</u>
FEMA Regulatory Floodway (Permit)	<input type="checkbox"/>	<u>X</u>
MDFW&P - Parks Division (Fishing Access Site)	<input type="checkbox"/>	<u>X</u>
MDFW&P - Wildlife Division (wetlands)	<input type="checkbox"/>	<u>X</u>
MDFW&P - Fisheries Division (<i>MSPA</i>)	<input type="checkbox"/>	<u>X</u>
MDNR&C (navigable rivers under state law)	<input type="checkbox"/>	<u>X</u>
MDNR&C (irrigation systems)	<input type="checkbox"/>	<u>X</u>
MDEQ - Air Quality Division	<input type="checkbox"/>	<u>X</u>
MDEQ - Permitting and Compliance - MPDES Permit/SWPPP	<u>X</u>	—
Other: None	—	<u>X</u>

NOTE: Any response in a box will require additional information, and may result in an individual evaluation/statement.

ALTERNATIVES & FINDINGS

EACH of the following **ALTERNATIVES** for this proposed project have been evaluated to avoid the use of the historic bridge:

1. "Do Nothing."
2. Rehabilitate the existing bridge without affecting the historic integrity of the structure in accordance with the provisions of *Section 106* in the *NHPA*.
3. Construct the proposed bridge at a location where the integrity of the existing historic structure will not be affected as determined by the provisions of the *NHPA*.

The above **ALTERNATIVES** have been applied in accordance with this PROGRAMMATIC SECTION 4(f) EVALUATION and are supported by **EACH** of the following **FINDINGS**:

- | | <u>YES</u> | <u>NO</u> |
|--|-------------------|--------------------------|
| 1. The "Do Nothing" ALTERNATIVE has been evaluated and has been found to ignore the basic transportation need at this location. | <u> X </u> | <input type="checkbox"/> |

This **ALTERNATIVE** is neither feasible nor prudent for the following reasons:

- | | | |
|---|---|-------------------------------------|
| a) Maintenance — this ALTERNATIVE does not correct the structurally deficient condition and/or poor geometrics (clearances, approaches, visibility restrictions) found at the existing bridge. Any of these factors can lead to a sudden catastrophic collapse, and/or a potential injury including loss of life. Normal maintenance will not change this situation. | — | <input checked="" type="checkbox"/> |
|---|---|-------------------------------------|

The existing bridge is not structurally deficient or at risk of a sudden catastrophic collapse.

- | | | |
|---|--------------|--------------------------|
| b) Safety — this ALTERNATIVE also does not correct the situation which causes the existing bridge to be considered deficient. Because of these deficiencies, the existing bridge presents a serious and unacceptable safety hazard to the traveling public and/or places intolerable restrictions (gross vehicle weight, height, and/or width) on transport. | <u> X </u> | <input type="checkbox"/> |
|---|--------------|--------------------------|

The existing bridge deck accommodates only a 10.97 m (36 feet) wide roadway. MDT's Road Design Manual and Route Segment Plan call for a minimum road width of 12 m (40 feet) for Rural Principal Arterials on the National Highway System (NHS) with traffic volumes similar to those within the Townsend-South corridor.

A copy of the MDT Bridge Bureau's Inspection Report for the bridge is attached.	<u> X </u>	<input type="checkbox"/>
---	--------------	--------------------------

2. The rehabilitation **ALTERNATIVE** has been evaluated with one or more of the following **FINDINGS**:

- | | <u>YES</u> | <u>NO</u> |
|---|-------------------|------------------|
| a) The existing bridge's structural deficiency is such that it cannot be rehabilitated to meet minimum acceptable load and traffic requirements without adversely affecting the structure's historic integrity. | — | <u> X </u> |
| b) The existing bridge's geometrics (height, width) cannot be changed without adversely affecting the structure's historic integrity. | <u> X </u> | — |

The historic integrity of the structure would be adversely affected by widening.

ALTERNATIVES & FINDINGS (continued)

	<u>YES</u>	<u>NO</u>
c) This ALTERNATIVE does not correct the serious restrictions on visibility (approach geometrics, structural requirements) which also contributes to an unsafe condition at these locations.	<u> </u>	<u> X </u>
Is this rehabilitation ALTERNATIVE therefore considered to be feasible and/or prudent based on the preceding evaluations?	<input type="checkbox"/>	<u> X </u>
3. The relocation ALTERNATIVE , in which the new bridges have been moved to sites that present no adverse effect upon the existing structures has also been considered under the following FINDINGS :		
a) Terrain and/or local geology. The present structure is located at the only feasible and/or prudent site for the bridge on the existing route. Relocating to a new site — either up-, or downstream of the preferred location — will result in extraordinary bridge/approach engineering and associated construction costs.	<u> X </u>	
The preferred site is the <u>only</u> prudent location due to the terrain and/or geologic conditions in the general vicinity.	<u> </u>	<u> X </u>
Any other location would cause extraordinary disruption to existing traffic patterns.	<u> X </u>	
b) Significant social, economic and/or environmental impacts. Locating the proposed bridge in other than the preferred site would result in significant social/economic impacts such as the displacement of families, businesses, or severing of prime/unique farmlands.	<u> X </u>	<u> </u>
<i>Shifting the alignment east or west of the existing highway would also require crossing the Montana Ditch. Shifting the highway to the east would place the new highway less than 37 m (120 feet) from the centerline of Montana Rail Link's mainline track, eliminating the ability to provide storage between the highway and the railroad for a tractor-trailer combination attempting to cross the rail line. Shifting the road substantially to the east would convert large areas of important farmland and agricultural land, disrupt existing irrigation systems and utilities, and require significant new right-of-way acquisition.</i>		
Significant environmental impacts such as the extraordinary involvement in wetlands, regulated floodplains, or habitat of threatened/endangered species are likely to occur in any location outside the preferred site.	<u> X </u>	<u> </u>
<i>Shifting the road substantially to the east would result in extensive impacts to roadside wetlands.</i>		
c) Engineering and economics. Where difficulty/ies associated with a new location are less extreme than those listed above, the site may still not be feasible and prudent where costs and/or engineering difficulties reach extraordinary magnitudes. Does the ALTERNATE location result in significantly increased engineering or construction costs (such as a longer span, longer approaches, etc.)?	<u> </u>	<u> X </u>
d) Preservation of existing historic bridge may not be possible due to either or both of the following:		
the existing structure has deteriorated beyond all reasonable possibility of rehabilitation for a transportation or alternative use;	<u> </u>	<u> X </u>

ALTERNATIVES & FINDINGS (continued)

no responsible party can be located to maintain and preserve the historic structure.

YES

NO

—

X

Therefore, in accordance with the previously-listed FINDINGS it is neither feasible nor prudent to locate the proposed bridge at a site other than the preferred **ALTERNATE** as described.

X

☐

MEASURES TO MINIMIZE HARM

This "Nationwide" Programmatic Section 4(f) Statement applies only when the following **Measures to Minimize Harm** have been assured; a check in a box MAY void the Programmatic application — if so, a full Section 4(f) Evaluation **will be required**:

YES

NO

1. Is the bridge being rehabilitated under this proposed project?

—

X

If "YES", is the historic integrity of the structures being preserved to the greatest extent possible; consistent with unavoidable transportation needs, safety, and load requirements?

N/A

☐

NOTE:

If "NO", refer to item 2., following, to determine Programmatic applicability.

2. The bridge is being replaced, or rehabilitated to the point where historic integrity is affected. Are adequate records being made of the existing structures under HISTORIC AMERICAN ENGINEERING RECORD standards, or other suitable means developed through consultation with SHPO and the ACHP?

X

☐

MDT's 1993 publication "Monuments Above The Water: Montana's Historic Highway Bridges, 1860-1956" and the listing of other similar structures within the state worthy of rehabilitation in MDT's Roads and Bridges Historic Preservation Plan constitutes sufficient documentation for reinforced concrete structures. More than 400 such bridges were built in Montana between 1920 and 1955.

3. If the bridge is being replaced, is the existing structure being made available for alternative use with a responsible party to maintain and preserve same?

—

☒

Due to the one-piece construction of the bridge abutments and the bridge structure itself, reinforced concrete slab bridges cannot be readily moved. If an attempt were made to lift and move the structure, it is possible the bridge would fall apart. Adoption in-place is not feasible because the a new pipe or box culvert for the Montana Ditch will be constructed on the same location as the existing bridge.

4. If the bridge is being adversely affected, has agreement been reached through the Section 106 process of the *National Historic Preservation Act* on these **Measures to Minimize Harm** (which will be incorporated into the proposed project) with the following:

MDT's historic roads and bridges Programmatic Agreement with the FHWA, the SHPO, and the ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP) was enacted in lieu of regular procedures for compliance with Section 106 of the NATIONAL HISTORIC PRESERVATION ACT. The Programmatic Agreement was signed on July 17, 1997.

SHPO?

X

☐

ACHP?	<u> X </u>	<input type="checkbox"/>
FHWA?	<u> X </u>	<input type="checkbox"/>
A copy of the Memorandum of Agreement (MOA) signed/approved by these agencies is attached.	<u> </u>	<input checked="" type="checkbox"/>

The Programmatic Agreement is an attachment to MDT's Roads and Bridges Historic Preservation Plan.

COORDINATION

- | | <u>YES</u> | <u>NO</u> |
|---|-------------------|--------------------------|
| 1. The proposed project has been COORDINATED with the following: | | |
| a) SHPO
<i>Programmatic Agreement – MT historic roads and bridges</i>

<i>April 21, 2004 – Concurrence with MDT NHRP-eligibility determinations and Treatment of bridge under terms of 1997 Programmatic Agreement</i> | <u> X </u> | <input type="checkbox"/> |
| b) ADVISORY COUNCIL ON HISTORIC PRESERVATION
<i>Programmatic Agreement – MT historic roads and bridges</i> | <u> X </u> | <input type="checkbox"/> |
| c) Property owners
<i>June 28, 2002 - Public Information meeting</i> | <u> X </u> | <u> </u> |
| d) Local/State/Federal agencies (FHWA)
<i>Programmatic Agreement – MT historic roads and bridges</i> | <u> X </u> | <input type="checkbox"/> |
| 2. One of the preceding had the following comment(s) regarding this proposed project, and/or the mitigation: | | |

No comments received.

This proposed project is also documented as an **ENVIRONMENTAL ASSESSMENT** under the requirements of the *National Environmental Policy Act (42 U.S.C. 4321, et seq.)*.

SUMMARY & APPROVAL

The "Do Nothing" alternative ignores the basic transportation needs for providing a wider roadway surface on the Montana Ditch bridge and two other bridges within this project. The proposed action is preferred because the No Build Alternative does not satisfy the specified purpose and need for improving U.S. Highway 287 south of Townsend. The No Build Alternative does not meet the traveling public's needs because it does not address the deficient surface width associated with the road and its bridges and does not eliminate or reduce other identified conditions that contribute to safety and operation problems on the existing roadway. The No Build Alternative does not provide a traffic facility consistent with all MDT design standards for Rural Principal Arterials Montana's National Highway System.

Rebuilding the road on an alignment similar to that of the existing highway could be accomplished, however, this alternative would not avoid impacts to the Montana Ditch Bridge and would result in an unacceptable encroachment on the nearby Montana Rail Link railroad main line. Shifting the new road west would place the new highway too close to the railroad main line and would require a crossing of the Montana Ditch. Similarly, shifting the alignment of U.S. Highway 287 to the east of the present highway to avoid the Montana Ditch Bridge would also require crossing the Montana Ditch and increase the impacts on other portions of the historic irrigation system in the area. Substantially changing the location of U.S. Highway 287 would likely

result in significant social, economic and environmental effects.

The existing bridge cannot be rehabilitated without adversely affecting its historic integrity. Constructing a new bridge at a location which would not adversely affect the existing structure cannot be accomplished without causing extraordinary environmental impacts or substantially increasing engineering and construction costs. Therefore, no feasible and prudent alternatives exist to avoid the use of the Montana Ditch Bridge (24BW956).

Part 3.0 of the attached Environmental Assessment describes the alternatives considered by MDT and the analysis used to identify a preferred alternative for this proposed project. The proposed action meets all criteria regarding the required **ALTERNATIVES, FINDINGS, and Measures to Minimize Harm** which will be incorporated into this proposed project. All possible planning to minimize harm to 24MA1696 has been undertaken. This proposed project therefore complies with the July 5, 1983 Programmatic Section 4(f) Evaluation by the U.S. DEPARTMENT OF TRANSPORTATION's Federal Highway Administration. This document is submitted pursuant to **49 U.S.C. 303** and in accordance with the provisions of **16 U.S.C. 470f**.



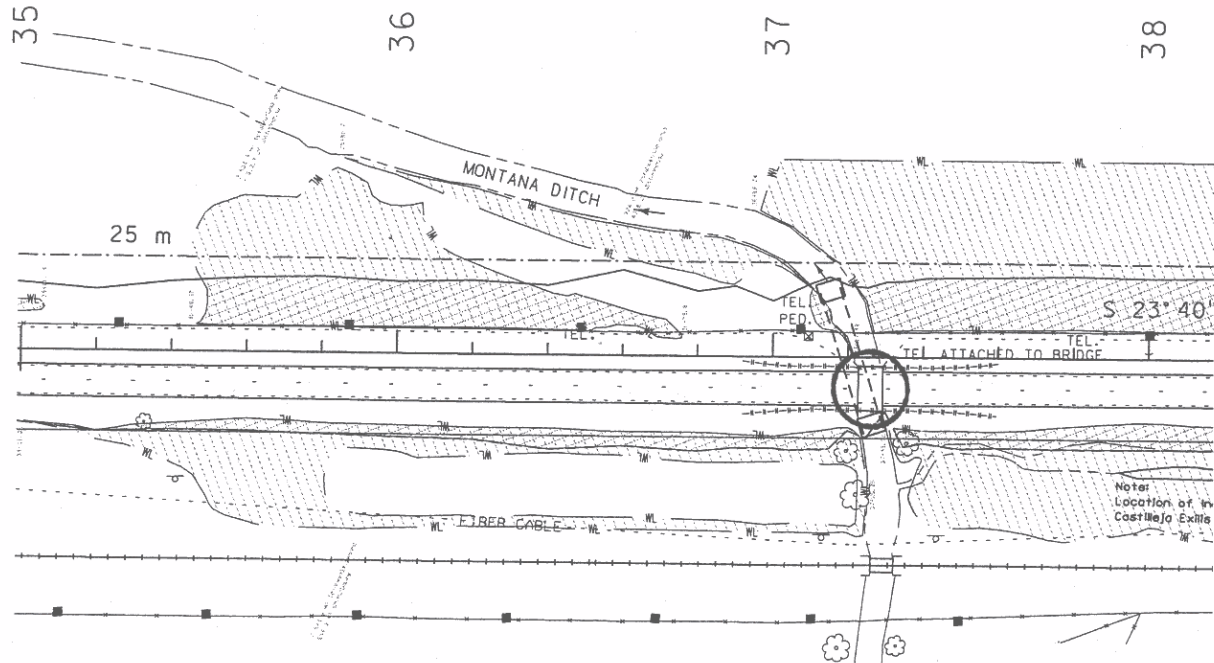
Thomas L. Hansen, P.E., Supervisor
Engineering Section
MDT Environmental Services

Date: 9/26/05

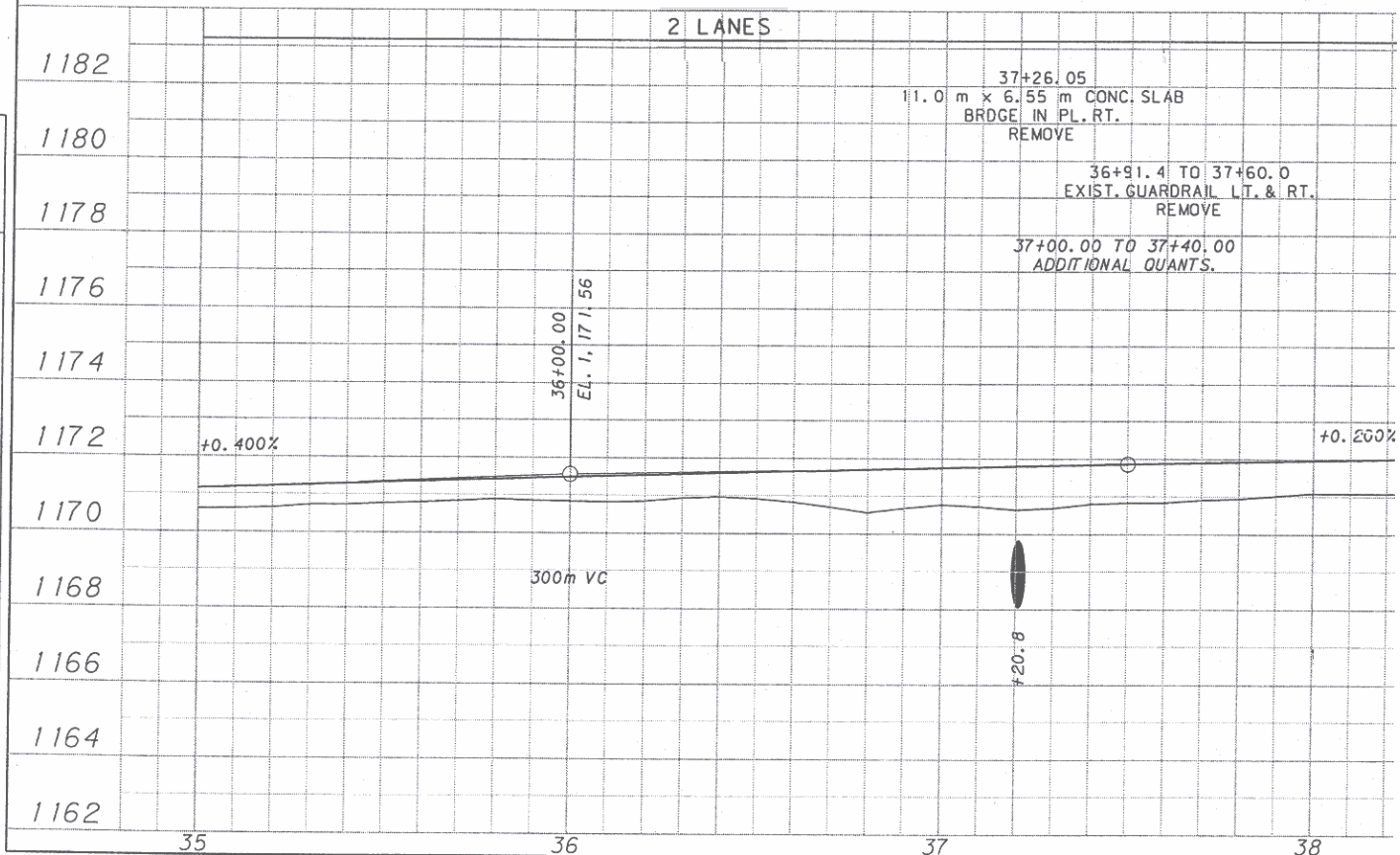
Approved: Jeffrey A. Patten
Federal Highway Administration

Date: Oct 6, 2005

Montana Ditch Bridge (24BW956)



12' LT.
37+20.8
NEW 1800 mm IRR. PIPE



... \graphics\1420RDPL\NOTES\GRAPH BY DES	DES
6/8/2005	REVIEWED BY DES
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2	donna
1	

INITIAL ASSESSMENT FORM FOR STRUCTURE :

P00008078+09461

Location : 1M S TOWNSEND Structure Name: none

General Location Data

District Code, Number, Location : **02** Dist 2 **BUTTE**
County Code, Location : **007** **BROADWATER**
Kind fo Hwy Code, Description : **2** **2 U.S. Numbered Hwy**
Str Owner Code, Description : **1** **State Highway Agency**
Intersecting Feature : **IRRIGATION CANAL**
Structure on the State Highway System : ☒ Latitude : **46°18'00"**
Structure on the National Highway System : ☒ Longitude : **111°30'24"**
Str Meet or Exceed NBIS Bridge Length : ☒
Division Code, Location : **21** **BUTTE**
City Code, Location : **00000** **RURAL AREA**
Signed Route Number : **00287**
Maintained by Code, Description : **1** **State Highway Agency**
Kilometer Post, Mile Post : **127.04 km** **78.77**

Construction Data

Construction Project Number : **204 C**
Construction Station Number : **504+02.00**
Construction Drawing Number : **710**
Construction Year : **1931**
Reconstruction Year : **1939**

Traffic Data

Current ADT : **5,340** ADT Count Year : **2004** Percent Trucks : **2 %**

Structure Loading, Rating and Posting Data

Loading Data :

Design Loading :		2 M 13.5 (H 15)
Inventory Load, Design :	24.4 mton	2 AS Allowable Stress
Operating Load, Design :	57.1 mton	2 AS Allowable Stress
Posting :		5 At/Above Legal Loads

Rating Data :

	Operating	Inventory	Posting
Truck Type 1 :	-1	-1	
Truck Type 2 :	-1	-1	
Truck Type 3 :	97	-1	

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data :

Structure Length : **7.01 m**
Deck Area : **77.00 m sq**
Deck Roadway Width : **10.97 m**
Approach Roadway Width : **10.97 m**
Median Code, Description : **0 No median**

Structure Vertical and Horizontal Clearance Data :

Vertical Clearance Over the Structure : **99.99 m**
Reference Feature for Vertical Clearance : **N Feature not hwy or RR**
Vertical Clearance Under the Structure : **0.00 m**
Reference Feature for Lateral Underclearance : **N Feature not hwy or RR**
Minimum Lateral Under Clearance Right : **0.00 m**
Minimum Lateral Under Clearance Left : **0.00 m**

Span Data

Main Span

Number Spans : **1**
Material Type Code, Description : **1 Concrete**
Span Design Code, Description : **1 Slab**
Deck
Deck Structure Type : **1 Concrete Cast-in-Place**
Deck Surfacing Type : **6 Bituminous**
Deck Protection Type : **0 None**
Deck Membrain Type : **0 None**

Approach Span

Number of Spans : **0**
Material Type Code, Description :
Span Design Code, Description :

Structure Vertical and Horizontal Clearance Data Inventory Route :

Over / Under Direction Name	Inventory Route	South, East or Bi-directional Travel			North or West Travel		
		Direction	Vertical	Horizontal	Direction	Vertical	Horizontal
Route On Structure	P00008	Both	99.99 m	10.97 m	N/A		

P00008078+09461

Continue

Inspection Data

Sufficiency Rating : **70.6**

Health Index : **99.96**

Structure Status : **Not Deficient**

Inspection Due Date : **11 February 2006**

(91) Inspection Frequency (months) : **24**

Next Fracture Critical Due Date : **01 Jan 1901**

Fracture Critical Detail : **No FC Details**

Next Under Water Insp : **01 Jan 1901**

Under Water Insp Type : **None**

Next Other Insp Due Date : **01 Jan 1901**

Other Insp Type : **No Oth Inps**

NBI Inspection Data

(90) Date of Last Inspection : **11 February 2004**

Last Inspected By : **Daniel Gravage - 71**

(90) Inspection Date :

Inspected By :

(58) Deck Rating :

7

(68) Deck Geometry :

4

(36C) Approach Rail Rating :

1

(62) Culvert Rating :

N

(59) Superstructure Rating :

7

(67) Structure Rating :

6

(36A) Bridge Rail Rating :

0

(61) Channel Rating :

8

(60) Substructure Rating :

7

(69) Under Clearance :

N

(36B) Transition Rating :

1

(71) Waterway Adequacy :

8

(72) App Rdwy Align :

8

(41) Posting Status :

A

(36D) End Rail Rating :

1

(113) Scour Critical :

8

Unrepaired Spalls : **0 m sq**

Deck Surfacing Depth : **9.00 in**

Inspection Hours

Crew Hours for inspection :

.5

Snooper Required : **N**

Helper Hours :

-1

Snooper Hours for inspection :

-1

Special Crew Hours :

-1

Flagger Hours :

-1

Special Equipment Hours :

-1

Inspection Work Candidates		Status	Priority	Effected Structure Unit	Scope of Work	Action	Covered Condition States
Candidate ID	Date Requested						

No Inspection Work Canadates

INITIAL ASSESSMENT FORM FOR STRUCTURE :

P00008078+09461

Continue

Element Inspection Data

***** Span : Main-0 - -1 *****

Element Description										
Smart Flag	Scale Factor	Env	Quantity	Units	Insp Each	Pct Stat 1	Pct Stat 2	Pct Stat 3	Pct Stat 4	Pct Stat 5
Element 39 - Unp Conc Slab/AC Ovl										
	1	3	83	sq.m.	X	100	0	0	0	0
						%	%	%	%	%
Previous Inspection Notes :										
02/11/2004 - None										NZKZ
11/20/2001 - None										UKKT
02/07/2000 - None										GBIV
03/09/1998 - None										UJCR
12/01/1995 - None										YDNF
11/01/1993 - None										REFI
Inspection Notes:										
Element 215 - R/Conc Abutment										
	1	3	20	m.		100	0	0	0	0
						%	%	%	%	%
Previous Inspection Notes :										
02/11/2004 - None										NZKZ
11/20/2001 - None										UKKT
02/07/2000 - None										GBIV
03/09/1998 - None										UJCR
12/01/1995 - None										YDNF
11/01/1993 - None										REFI
Inspection Notes:										
Element 331 - Conc Bridge Railing										
	1	2	14	m.		90	10	0	0	0
						%	%	%	%	%
Previous Inspection Notes :										
02/11/2004 - None										NZKZ
11/20/2001 - None										UKKT
02/07/2000 - None										GBIV
03/09/1998 - None										UJCR
12/01/1995 - None										YDNF
11/01/1993 - None										REFI
Inspection Notes:										

P00008078+09461

Continue

General Inspection Notes

02/11/2004 - None	NZKZ
11/20/2001 - None	UKKT
02/07/2000 - None	GBIV
03/09/1998 - None	UJCR
12/01/1995 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/10/97 11:34:32	YDNF
Sufficiency Rating Calculation Accepted by OPS\$U9004 at 2/19/97 14:34:10	
11/01/1993 -	REFI
06/01/1992 - Updated with tape 1994	NB94
05/01/1990 - Updated with tape 1992	NB92
02/01/1988 - Updated with tape 1989	NB89
04/01/1986 - Updated with tape 1988	NB88
03/01/1984 - Updated with tape 1985	NB85
12/01/1982 - Updated with tape 1984	NB84
10/01/1980 - Updated with tape 1982	NB82
08/01/1977 - Updated with tape 1980	NB80

MONTANA DIVISION
**"NATIONWIDE" PROGRAMMATIC SECTION 4(f) EVALUATION FOR
 HISTORIC BRIDGES**

Project # NH-F 8-4 (16) 78 F, (C.N. #1420)
 Project Name: TOWNSEND-SOUTH

Date: August 1, 2005
 Location: Deep Creek Overflow Bridge
(24BW958)
Broadwater County, Montana

The Townsend-South project will reconstruct 13.2 km (8.0 miles) of U. S. Highway 287 beginning immediately south of the City of Townsend at RP 78.1 and ending north of Toston at RP 86.1. The project will be reconstructed to closely follow the existing alignment and will generally provide a two-lane highway with wide shoulders, auxiliary turn lanes, and one or more four-lane passing sections to improve the facility's operation and safety. The project crosses a drainage channel associated with Deep Creek at RP 80.6 and will impact the Deep Creek Overflow Bridge (24BW958). The Deep Creek Overflow Bridge is a 10.97 m (36 feet) wide by 7.01 m (23 feet) long single-span, cast-in-place reinforced concrete slab structure built in 1931 and reconstructed in 1939. MDT determined the bridge eligible for the National Register of Historic Places (NHRP) under Criterion C as an excellent example of a 1930's concrete slab bridge.

Reconstruction of U.S. Highway 287 will require the removal of the Deep Creek Overflow Bridge. Although the existing bridge is not structurally deficient, the Deep Creek Overflow Bridge is not wide enough to accommodate road widening to at least 12.0 m (about 40 feet). The existing bridge will be replaced with new CSP stockpass.

A map showing the location of the 24BW958 is attached.

NOTE: Any response in a box will require additional information, and may result in an individual evaluation/statement.

	<u>YES</u>	<u>NO</u>
1. Is the bridge a NATIONAL HISTORIC LANDMARK?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Have agreements been reached through the procedures pursuant to <i>Section 106</i> of the <i>National Historic Preservation Act (NHPA)</i> with the following:		
STATE HISTORIC PRESERVATION OFFICE (SHPO)?	<u>X</u>	<input type="checkbox"/>
ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP)?	<u>X</u>	<input type="checkbox"/>
<i>MDT's historic roads and bridges Programmatic Agreement with the FHWA, the SHPO, and ACHP was enacted in 1997 in lieu of regular procedures for compliance with Section 106 of the NATIONAL HISTORIC PRESERVATION ACT as applied only to historic roads and bridges in Montana.</i>		
3. Any other agency/ies with jurisdiction at this location?	<u>X</u>	<u> </u>
a) If "YES" will additional approval(s) for this <i>Section 4(f)</i> application be required?	<input type="checkbox"/>	<u>X</u>
b) List of agencies with jurisdiction at this location:		
USA - CORPS OF ENGINEERS (<i>Section 404</i> Permit) – <i>jurisdictional wetlands</i>	<u>X</u>	<u> </u>
USDA - Forest Service	<input type="checkbox"/>	<u>X</u>
USDA - Natural Resources Conservation Service (<i>FPPA</i>)	<input type="checkbox"/>	<u>X</u>
FEMA Regulatory Floodway (Permit)	<input type="checkbox"/>	<u>X</u>
MDFW&P - Parks Division (Fishing Access Site)	<input type="checkbox"/>	<u>X</u>
MDFW&P - Wildlife Division (wetlands)	<input type="checkbox"/>	<u>X</u>
MDFW&P - Fisheries Division (<i>MSPA</i>) – <i>124SPA Permit</i>	<input checked="" type="checkbox"/>	<u> </u>
MDNR&C (navigable rivers under state law)	<input type="checkbox"/>	<u>X</u>
MDNR&C (irrigation systems)	<input type="checkbox"/>	<u>X</u>
MDEQ - Air Quality Division	<input type="checkbox"/>	<u>X</u>
MDEQ - Permitting and Compliance - MPDES Permit/SWPPP	<u>X</u>	<u> </u>
Other: None	<u> </u>	<u>X</u>

NOTE: Any response in a box will require additional information, and may result in an individual evaluation/statement.

ALTERNATIVES & FINDINGS

EACH of the following **ALTERNATIVES** for this proposed project have been evaluated to avoid the use of the historic bridge:

1. "Do Nothing."
2. Rehabilitate the existing bridge without affecting the historic integrity of the structure in accordance with the provisions of *Section 106* in the *NHPA*.
3. Construct the proposed bridge at a location where the integrity of the existing historic structure will not be affected as determined by the provisions of the *NHPA*.

The above **ALTERNATIVES** have been applied in accordance with this PROGRAMMATIC SECTION 4(f) EVALUATION and are supported by **EACH** of the following **FINDINGS**:

- | | <u>YES</u> | <u>NO</u> |
|--|-------------------|--------------------------|
| 1. The "Do Nothing" ALTERNATIVE has been evaluated and has been found to ignore the basic transportation need at this location. | <u> X </u> | <input type="checkbox"/> |

This **ALTERNATIVE** is neither feasible nor prudent for the following reasons:

- | | | |
|---|---|-------------------------------------|
| a) Maintenance — this ALTERNATIVE does not correct the structurally deficient condition and/or poor geometrics (clearances, approaches, visibility restrictions) found at the existing bridge. Any of these factors can lead to a sudden catastrophic collapse, and/or a potential injury including loss of life. Normal maintenance will not change this situation. | — | <input checked="" type="checkbox"/> |
|---|---|-------------------------------------|

The existing bridge is not structurally deficient or at risk of a sudden catastrophic collapse.

- | | | |
|---|--------------|--------------------------|
| b) Safety — this ALTERNATIVE also does not correct the situation which causes the existing bridge to be considered deficient. Because of these deficiencies, the existing bridge presents a serious and unacceptable safety hazard to the traveling public and/or places intolerable restrictions (gross vehicle weight, height, and/or width) on transport. | <u> X </u> | <input type="checkbox"/> |
|---|--------------|--------------------------|

The existing bridge deck accommodates only a 10.97 m (36 feet) wide roadway. MDT's Road Design Manual and Route Segment Plan call for a minimum road width of 12 m (40 feet) for Rural Principal Arterials on the National Highway System (NHS) with traffic volumes similar to those within the Townsend-South corridor.

A copy of the MDT Bridge Bureau's Inspection Report for the bridge is attached.	<u> X </u>	<input type="checkbox"/>
---	--------------	--------------------------

2. The rehabilitation **ALTERNATIVE** has been evaluated with one or more of the following **FINDINGS**:

- | | <u>YES</u> | <u>NO</u> |
|---|-------------------|------------------|
| a) The existing bridge's structural deficiency is such that it cannot be rehabilitated to meet minimum acceptable load and traffic requirements without adversely affecting the structure's historic integrity. | — | <u> X </u> |
| b) The existing bridge's geometrics (height, width) cannot be changed without adversely affecting the structure's historic integrity. | <u> X </u> | — |

The historic integrity of the structure would be adversely affected by widening.

ALTERNATIVES & FINDINGS (continued)

	<u>YES</u>	<u>NO</u>
c) This ALTERNATIVE does not correct the serious restrictions on visibility (approach geometrics, structural requirements) which also contributes to an unsafe condition at these locations.	—	<u>X</u>
Is this rehabilitation ALTERNATIVE therefore considered to be feasible and/or prudent based on the preceding evaluations?	<input type="checkbox"/>	<u>X</u>
3. The relocation ALTERNATIVE , in which the new bridges have been moved to sites that present no adverse effect upon the existing structures has also been considered under the following FINDINGS :		
a) Terrain and/or local geology. The present structure is located at the only feasible and/or prudent site for the bridge on the existing route. Relocating to a new site — either up-, or downstream of the preferred location — will result in extraordinary bridge/approach engineering and associated construction costs.	<u>X</u>	
The preferred site is the <u>only</u> prudent location due to the terrain and/or geologic conditions in the general vicinity.	—	<u>X</u>
Any other location would cause extraordinary disruption to existing traffic patterns.	<u>X</u>	
b) Significant social, economic and/or environmental impacts. Locating the proposed bridge in other than the preferred site would result in significant social/economic impacts such as the displacement of families, businesses, or severing of prime/unique farmlands.	<u>X</u>	—
<i>Shifting the alignment east or west of the existing highway would also require crossing the Deep Creek Overflow channel. Shifting the highway to the east would place the new highway less than 37 m (120 feet) from the centerline of Montana RailLink's mainline track, eliminating the ability to provide storage between the highway and the railroad for a tractor-trailer combination attempting to cross the rail line. Shifting the road substantially to the east would convert large areas of important farmland and agricultural land, disrupt existing irrigation systems and utilities, and would likely require significant new right-of-way acquisition including a nearby residential relocation.</i>		
Significant environmental impacts such as the extraordinary involvement in wetlands, regulated floodplains, or habitat of threatened/endangered species are likely to occur in any location outside the preferred site.	<u>X</u>	—
<i>Shifting the road substantially to the east would result in extensive impacts to roadside wetlands.</i>		
c) Engineering and economics. Where difficulty/ies associated with a new location are less extreme than those listed above, the site may still not be feasible and prudent where costs and/or engineering difficulties reach extraordinary magnitudes. Does the ALTERNATE location result in significantly increased engineering or construction costs (such as a longer span, longer approaches, etc.)?	—	<u>X</u>
d) Preservation of existing historic bridge may not be possible due to either or both of the following:		
the existing structure has deteriorated beyond all reasonable possibility of rehabilitation for a transportation or alternative use;	—	<u>X</u>

ALTERNATIVES & FINDINGS (continued)

	<u>YES</u>	<u>NO</u>
no responsible party can be located to maintain and preserve the historic structure.	—	<u>X</u>
Therefore, in accordance with the previously-listed FINDINGS it is neither feasible nor prudent to locate the proposed bridge at a site other than the preferred ALTERNATE as described.	<u>X</u>	<input type="checkbox"/>

MEASURES TO MINIMIZE HARM

This "Nationwide" Programmatic Section 4(f) Statement applies only when the following **Measures to Minimize Harm** have been assured; a check in a box MAY void the Programmatic application — if so, a full Section 4(f) Evaluation **will be required**:

	<u>YES</u>	<u>NO</u>
1. Is the bridge being rehabilitated under this proposed project?	—	<u>X</u>
If "YES", is the historic integrity of the structures being preserved to the greatest extent possible; consistent with unavoidable transportation needs, safety, and load requirements?	<u>N/A</u>	<input type="checkbox"/>

NOTE:

If "NO", refer to item 2., following, to determine Programmatic applicability.

2. The bridge is being replaced, or rehabilitated to the point where historic integrity is affected. Are adequate records being made of the existing structures under HISTORIC AMERICAN ENGINEERING RECORD standards, or other suitable means developed through consultation with SHPO and the ACHP?	<u>X</u>	<input type="checkbox"/>
--	----------	--------------------------

MDT's 1993 publication "Monuments Above The Water: Montana's Historic Highway Bridges, 1860-1956" and the listing of other similar structures within the state worthy of rehabilitation in MDT's Roads and Bridges Historic Preservation Plan constitutes sufficient documentation for reinforced concrete structures. More than 400 such bridges were built in Montana between 1920 and 1955.

3. If the bridge is being replaced, is the existing structure being made available for alternative use with a responsible party to maintain and preserve same?	—	<input checked="" type="checkbox"/>
--	---	-------------------------------------

Due to the one-piece construction of the bridge abutments and the bridge structure itself, reinforced concrete slab bridges cannot be readily moved. If an attempt were made to lift and move the structure, it is possible the bridge would fall apart. Adoption in-place is not feasible because the a new pipe or box culvert for the Deep Creek Overflow will be constructed on the same location as the existing bridge.

4. If the bridge is being adversely affected, has agreement been reached through the <i>Section 106</i> process of the <i>National Historic Preservation Act</i> on these Measures to Minimize Harm (which will be incorporated into the proposed project) with the following:		
---	--	--

MDT's historic roads and bridges Programmatic Agreement with the FHWA, the SHPO, and the ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP) was enacted in lieu of regular procedures for compliance with Section 106 of the NATIONAL HISTORIC PRESERVATION ACT. The Programmatic Agreement was signed on July 17, 1997.

SHPO?	<u>X</u>	<input type="checkbox"/>
ACHP?	<u>X</u>	<input type="checkbox"/>

FHWA?	<u> X </u>	<input type="checkbox"/>
A copy of the Memorandum of Agreement (MOA) signed/approved by these agencies is attached.	<u> </u>	<input checked="" type="checkbox"/>

The Programmatic Agreement is an attachment to MDT's Roads and Bridges Historic Preservation Plan.

COORDINATION

- | | <u>YES</u> | <u>NO</u> |
|---|-------------------|--------------------------|
| 1. The proposed project has been COORDINATED with the following: | | |
| a) SHPO
<i>Programmatic Agreement – MT historic roads and bridges</i>
<i>April 21, 2004 – Concurrence with MDT NHRP-eligibility determinations and Treatment of bridge under terms of 1997 Programmatic Agreement</i> | <u> X </u> | <input type="checkbox"/> |
| b) ADVISORY COUNCIL ON HISTORIC PRESERVATION
<i>Programmatic Agreement – MT historic roads and bridges</i> | <u> X </u> | <input type="checkbox"/> |
| c) Property owners
<i>June 28, 2002 - Public Information meeting</i> | <u> X </u> | <u> </u> |
| d) Local/State/Federal agencies (FHWA)
<i>Programmatic Agreement – MT historic roads and bridges</i> | <u> X </u> | <input type="checkbox"/> |
| 2. One of the preceding had the following comment(s) regarding this proposed project, and/or the mitigation: | | |
| <i>No comments received.</i> | | |

This proposed project is also documented as an **ENVIRONMENTAL ASSESSMENT** under the requirements of the *National Environmental Policy Act (42 U.S.C. 4321, et seq.)*.

SUMMARY & APPROVAL

The "Do Nothing" alternative ignores the basic transportation needs for providing a wider roadway surface on the Deep Creek Overflow bridge and two other bridges within this project. The proposed action is preferred because the No Build Alternative does not satisfy the specified purpose and need for improving U.S. Highway 287 south of Townsend. The No Build Alternative does not meet the traveling public's needs because it does not address the deficient surface width associated with the road and its bridges and does not eliminate or reduce other identified conditions that contribute to safety and operation problems on the existing roadway. The No Build Alternative does not provide a traffic facility consistent with all MDT design standards for Rural Principal Arterials Montana's National Highway System.

Rebuilding the road on an alignment similar to that of the existing highway could be accomplished, however, this alternative would not avoid impacts to the Deep Creek Overflow Bridge and would result in an unacceptable encroachment on the nearby Montana Rail Link railroad main line. Shifting the new road west would place the new highway too close to the railroad main line and would require a crossing of the overflow channel. Similarly, shifting the alignment of U.S. Highway 287 to the east of the present highway to avoid the existing bridge would still necessitate building another nearby crossing of the overflow channel and could increase the impacts on wetlands, farmland, and a farmhouse in the area. Substantially changing the location of U.S. Highway 287 would likely result in significant social, economic and environmental effects.

of U.S. Highway 287 would likely result in significant social, economic and environmental effects.

The existing bridge cannot be rehabilitated without adversely affecting its historic integrity. Constructing a new bridge at a location which would not adversely affect the existing structure cannot be accomplished without causing extraordinary environmental impacts or substantially increasing engineering and construction costs. Therefore, no feasible and prudent alternatives exist to avoid the use of the Deep Creek Overflow Bridge (24BW958).

Part 3.0 of the attached Environmental Assessment describes the alternatives considered by MDT and the analysis used to identify a preferred alternative for this proposed project. The proposed action meets all criteria regarding the required **ALTERNATIVES, FINDINGS, and Measures to Minimize Harm** which will be incorporated into this proposed project. All possible planning to minimize harm to 24MA1696 has been undertaken. This proposed project therefore complies with the July 5, 1983 Programmatic Section 4(f) Evaluation by the U.S. DEPARTMENT OF TRANSPORTATION's Federal Highway Administration. This document is submitted pursuant to **49 U.S.C. 303** and in accordance with the provisions of **16 U.S.C. 470f**.



Thomas L. Hansen, P.E., Supervisor
Engineering Section
MDT Environmental Services

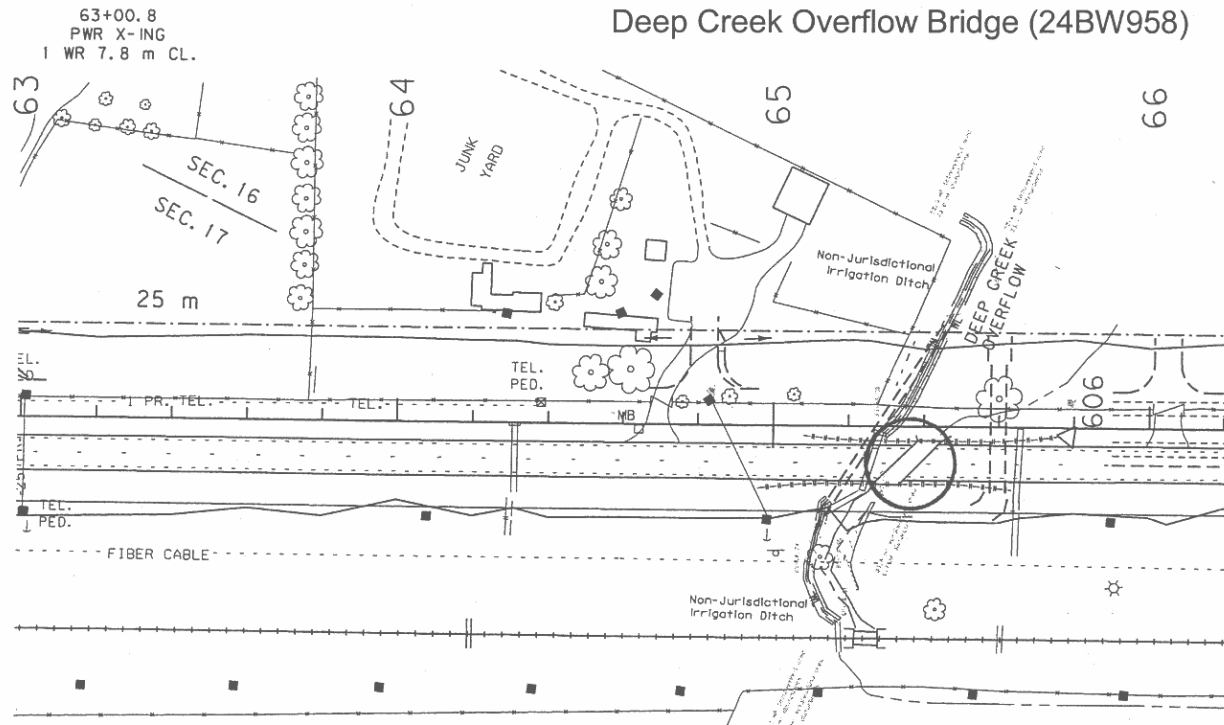
Date: 9/26/05

Approved: Jeffrey A. Patten
Federal Highway Administration

Date: Oct 6, 2005

F:\HIGHWAYS\ENVDOC01\townsouth03\draftea\deepcrbr4F.doc

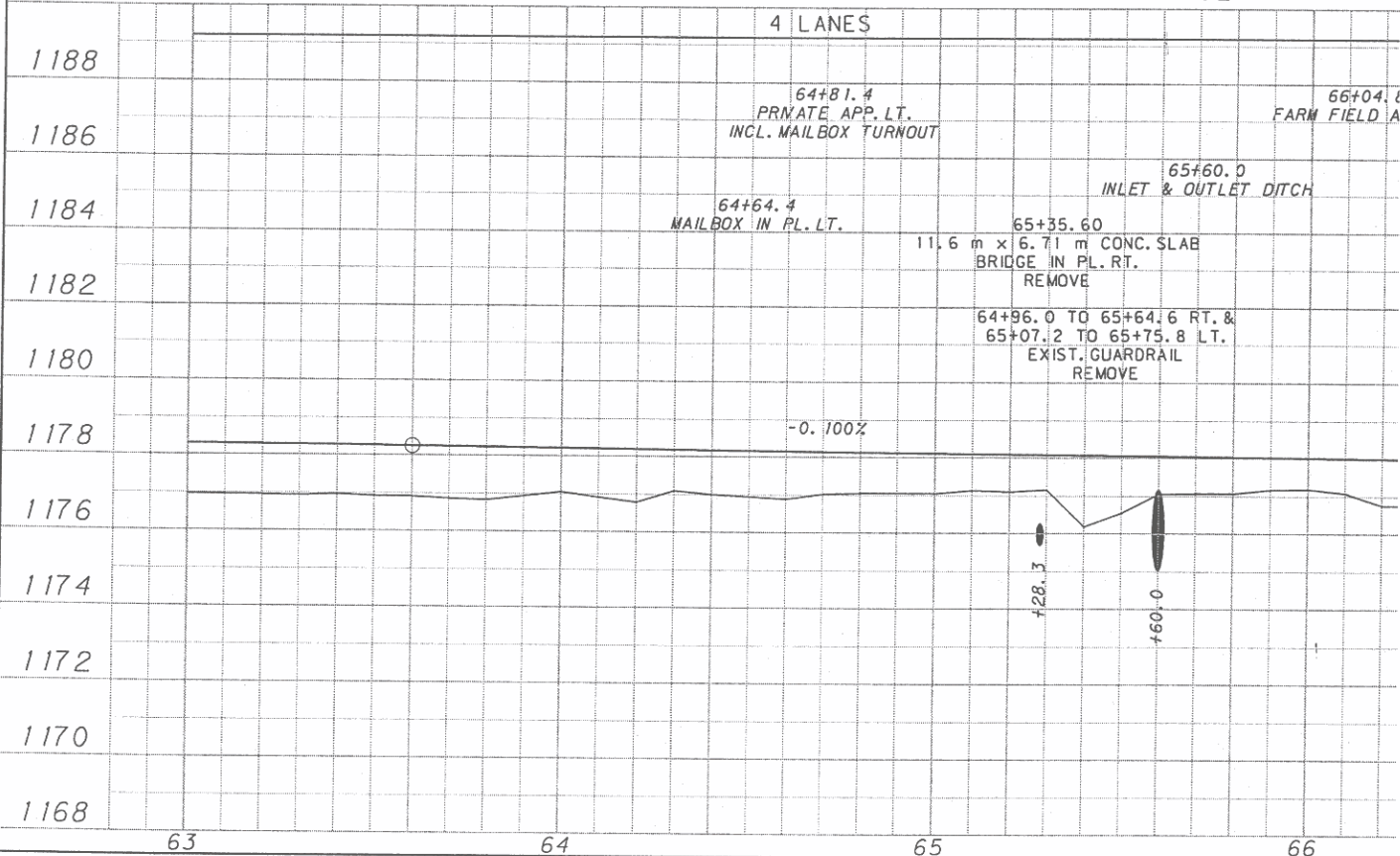
Deep Creek Overflow Bridge (24BW958)



64+31.0
457 mm RCP &
457 mm CMP IRR. IN PL.
REMOVE

65+27.8
610 mm RCP &
610 mm CMP IRR. IN PL.
REMOVE
65+28.3
NEW 600 mm IRR. PIPE

65+60.0
NEW 2100 mm CSP-STOCKPASS
CRITTER CROSSING
65+65.4
610 mm RCP &
610 mm CMP IRR. IN PL.
REMOVE



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6/8/2005
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3
donna

INITIAL ASSESSMENT FORM FOR STRUCTURE :

P00008080+06091

Location : 2M S TOWNSEND Structure Name: none

General Location Data

District Code, Number, Location : **02** Dist 2 **BUTTE**
County Code, Location : **007** **BROADWATER**
Kind fo Hwy Code, Description : **2** **2 U.S. Numbered Hwy**
Str Owner Code, Description : **1** **State Highway Agency**
Intersecting Feature : **DEEP CREEK OVERFLOW**
Structure on the State Highway System : ☒ Latitude : **46°16'18"**
Structure on the National Highway System : ☒ Longitude : **111°29'30"**
Str Meet or Exceed NBIS Bridge Length : ☒

Division Code, Location : **21** **BUTTE**
City Code, Location : **00000** **RURAL AREA**
Signed Route Number : **00287**
Maintained by Code, Description : **1** **State Highway Agency**
Kilometer Post, Mile Post : **129.71 km** **80.42**

Construction Data

Construction Project Number : **204 C**
Construction Station Number : **414+76.00**
Construction Drawing Number : **708**
Construction Year : **1931**
Reconstruction Year : **1939**

Traffic Data

Current ADT : **3,630** ADT Count Year : **2004** Percent Trucks : **2 %**

Structure Loading, Rating and Posting Data

Loading Data :

Design Loading :		2 M 13.5 (H 15)
Inventory Load, Design :	24.4 mton	2 AS Allowable Stress
Operating Load, Design :	54.4 mton	2 AS Allowable Stress
Posting :		5 At/Above Legal Loads

Rating Data :

	Operating	Inventory	Posting
Truck Type 1 :	-1	-1	
Truck Type 2 :	-1	-1	
Truck Type 3 :	93	-1	

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data :

Structure Length : **7.01 m**
Deck Area : **77.00 m sq**
Deck Roadway Width : **10.97 m**
Approach Roadway Width : **9.75 m**
Median Code, Description : **0 No median**

Structure Vertical and Horizontal Clearance Data :

Vertical Clearance Over the Structure : **99.99 m**
Reference Feature for Vertical Clearance : **N Feature not hwy or RR**
Vertical Clearance Under the Structure : **0.00 m**
Reference Feature for Lateral Underclearance : **N Feature not hwy or RR**
Minimum Lateral Under Clearance Right : **0.00 m**
Minimum Lateral Under Clearance Left : **0.00 m**

Span Data

Main Span

Number Spans : **1**
Material Type Code, Description : **1 Concrete**
Span Design Code, Description : **1 Slab**
Deck

Deck Structure Type : **1 Concrete Cast-in-Place**
Deck Surfacing Type : **6 Bituminous**
Deck Protection Type : **0 None**
Deck Membrain Type : **0 None**

Approach Span

Number of Spans : **0**
Material Type Code, Description :
Span Design Code, Description :


Structure Vertical and Horizontal Clearance Data Inventory Route :

Over / Under Direction Name	Inventory Route	South, East or Bi-directional Travel			North or West Travel		
		Direction	Vertical	Horizontal	Direction	Vertical	Horizontal
Route On Structure	P00008	Both	99.99 m	10.97 m	N/A		

INITIAL ASSESSMENT FORM FOR STRUCTURE :

P00008080+06091

Continue

Inspection Data

Sufficiency Rating : **70.6**

Health Index : **98.19**

Structure Status : **Not Deficient**
Inspection Due Date : 11 February 2006

(91) Inspection Frequency (months) : **24**

Next Fracture Critical Due Date : **01 Jan 1901**

Fracture Critical Detail : **No FC Details**

Next Under Water Insp : **01 Jan 1901**

Under Water Insp Type : **None**

Next Other Insp Due Date : **01 Jan 1901**

Other Insp Type : **No Oth Inps**

NBI Inspection Data

(90) Date of Last Inspection : 11 February 2004

Last Inspected By : Daniel Gravage - 71

(90) Inspection Date :

Inspected By :

(58) Deck Rating :

7

(68) Deck Geometry :

5

(36C) Approach Rail Rating :

1

(62) Culvert Rating :

N

(59) Superstructure Rating :

8

(67) Structure Rating :

6

(36A) Bridge Rail Rating :

0

(61) Channel Rating :

8

(60) Substructure Rating :

7

(69) Under Clearance :

N

(36B) Transition Rating :

1

(71) Waterway Adequacy :

8

(72) App Rdwy Align :

8

(41) Posting Status :

A

(36D) End Rail Rating :

0

(113) Scour Critical :

8

Unrepaired Spalls : 0 m sq

Deck Surfacing Depth : 3.00 in

Inspection Hours

Crew Hours for inspection : .5

Snooper Required : N

Helper Hours : -1

Snooper Hours for inspection : -1

Special Crew Hours : -1

Flagger Hours : -1

Special Equipment Hours : -1

Inspection Work Candidates		Status	Priority	Effected Structure Unit	Scope of Work	Action	Covered Condition States
Candidate ID	Date Requested						

No Inspection Work Canadates

INITIAL ASSESSMENT FORM FOR STRUCTURE :

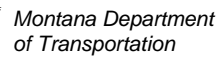
P00008080+06091

Continue

Element Inspection Data

***** Span : Main-0 - -1 *****

Element Description										
Smart Flag	Scale Factor	Env	Quantity	Units	Insp Each	Pct Stat 1	Pct Stat 2	Pct Stat 3	Pct Stat 4	Pct Stat 5
Element 39 - Unp Conc Slab/AC Ovl										
	1	3	83	sq.m.	X	100	0	0	0	0
						%	%	%	%	%
Previous Inspection Notes :										
02/11/2004 - None										NTLI
11/20/2001 - None										UKKL
02/07/2000 - None										GBIN
03/09/1998 - None										UJCW
12/01/1995 - None										YDNF
07/01/1994 - None										REFI
Inspection Notes:										
Element 215 - R/Conc Abutment										
	1	3	30	m.		90	10	0	0	0
						%	%	%	%	%
Previous Inspection Notes :										
02/11/2004 - None										NTLI
11/20/2001 - None										UKKL
02/07/2000 - None										GBIN
03/09/1998 - Wingwall on south west side cumberling.										UJCW
12/01/1995 - None										YDNF
07/01/1994 - None										REFI
Inspection Notes:										
Element 331 - Conc Bridge Railing										
	1	2	14	m.		90	10	0	0	0
						%	%	%	%	%
Previous Inspection Notes :										
02/11/2004 - None										NTLI
11/20/2001 - None										UKKL
02/07/2000 - None										GBIN
03/09/1998 - None										UJCW
12/01/1995 - None										YDNF
07/01/1994 - None										REFI
Inspection Notes:										



P00008080+06091

Continue

[illegible]

Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges

This statement sets forth the basis for a programmatic Section 4(f) approval that there are no feasible and prudent alternatives to the use of certain historic bridge structures to be replaced or rehabilitated with Federal funds and that the projects include all possible planning to minimize harm resulting from such use. This approval is made Pursuant to Section 4(f) of the Department of Transportation Act of 1966, 49 U.S.C. 303, and Section 18(a) of the Federal-Aid Highway Act of 1968 23 U.S.C. 138.

Use

The historic bridges covered by this programmatic Section 4(f) evaluation are unique because they are historic, yet also part of either a Federal-aid highway system or a state or local highway system that has continued to evolve over the years. Even though these structures are on or eligible for inclusion on the National Register of Historic Places, they must perform as an integral part of a modern transportation system. When they do not or cannot, they must be rehabilitated or replaced in order to assure public safety while maintaining system continuity and integrity. For the purpose of this programmatic Section 4(f) evaluation, a proposed action will "use" a bridge that is on or eligible for inclusion on the National Register of Historic Places when the action will impair the historic integrity of the bridge either by rehabilitation or demolition. Rehabilitation that does not impair the historic integrity of the bridge as determined by procedures implementing the national Historic Preservation Act of 1966, as amended (FHWA), is not subject to Section 4(f).

Applicability

This programmatic Section 4(f) evaluation may be applied by the Federal Highway Administration (FHWA) to projects which meet the following criteria:

1. The bridge is to be replaced or rehabilitated with Federal funds.
2. The project will require the use of a historic bridge structure which is on or is eligible for listing on the National Register of Historic Places.
3. The bridge is not a National Historic Landmark.
4. The FHWA Division Administrator determines that the facts of the project match those set forth in the sections of this document labeled Alternatives, Findings, and Mitigation.
5. Agreement among the FHWA, the State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) has been reached through procedures pursuant to Section 106 of the NHPA.

Alternatives

The following alternatives avoid any use of the historic bridge:

1. Do nothing.
2. Build a new structure at a different location without affecting the historic integrity of the old bridge, as determined by procedures implementing the NHPA.
3. Rehabilitate the historic bridge without affecting the historic integrity of the structure, as determined by procedures implementing the NHPA.

This list is intended to be **all-inclusive**. The programmatic Section 4(f) evaluation does not apply if a reasonable alternative is identified that is not discussed in this document. The project record must clearly demonstrate that each of the above alternatives was fully evaluated and it must further demonstrate that all applicability criteria listed above were met before the FHWA Division Administrator concluded that the programmatic Section 4(f) evaluation applied to the project.

Findings

In order for this programmatic Section 4(f) evaluation to be applied to a project, each of the following findings must be supported by the circumstances, studies, and consultations on the project:

1. **Do Nothing.** The do nothing alternative has been studied. The do nothing alternative ignores the basic transportation need. For the following reasons this alternative is not feasible and prudent:
 - a. Maintenance - The do nothing alternative does not correct the situation that causes the bridge to be considered structurally deficient or deteriorated. These deficiencies can lead to sudden collapse and potential injury or loss of life. Normal maintenance is not considered adequate to cope with the situation.
 - b. Safety - The do nothing alternative does not correct the situation that causes the bridge to be considered deficient.

Because of these deficiencies the bridge poses serious and unacceptable safety hazards to the traveling public or places intolerable restriction on transport and travel.
2. **Build on New Location Without Using the Old Bridge.** Investigations have been conducted to construct a bridge on a new location or parallel to the old bridge (allowing for a one- way couplet), but, for one or more of the following reasons, this alternative is not feasible and prudent:
 - a. Terrain - The present bridge structure has already been located at the only feasible and prudent site, i.e., a gap in the land form, the narrowest point of the river canyon, etc. To build a new bridge at another site will result in extraordinary bridge and approach engineering and construction difficulty or costs or extraordinary disruption to established traffic patterns.
 - b. Adverse Social , Economic, or Environmental Effects - Building a new bridge away from the present site would result in social, economic, or environmental impact of extraordinary magnitude. Such impacts as extensive severing of productive farmlands, displacement of a significant number of families or businesses, serious disruption of established travel patterns, and access and damage to wetlands may individually or cumulatively weigh heavily against relocation to a new site.
 - c. Engineering and Economy - Where difficulty associated with the new location is less extreme than those encountered above, a new site would not be feasible and prudent where cost and engineering difficulties reach extraordinary magnitude. Factors supporting this conclusion include significantly increased roadway and structure costs, serious foundation problems, or extreme difficulty in reaching the new site with construction equipment. Additional design and safety factors to be considered include an ability to achieve minimum design standards or to meet requirements of various permitting agencies such as those involved with navigation, pollution, and the environment.
 - d. Preservation of Old Bridge - It is not feasible and prudent to preserve the existing bridge, even if a new bridge were to be built at a new location. This could occur when the historic bridge is beyond rehabilitation for a transportation or an alternative use, when no responsible party can be located to maintain and preserve the bridge, or when a permitting authority, such as the Coast Guard requires removal or demolition of the old bridge.
3. **Rehabilitation Without Affecting the Historic Integrity of the Bridge.** Studies have been conducted of rehabilitation measures, but, for one or more of the following reasons, this alternative is not feasible and prudent:
 - a. The bridge is so structurally deficient that it cannot be rehabilitated to meet minimum acceptable load requirements without affecting the historic integrity of the bridge.
 - b. The bridge is seriously deficient geometrically and cannot be widened to meet the minimum required capacity of the highway system on which it is located without affecting the historic integrity of the bridge. Flexibility in the application of the American Association of State Highway and Transportation Officials geometric standards should be exercised as permitted in 23 CFR Part 625 during the analysis of this alternative.

Measures to Minimize Harm

This programmatic Section 4(f) evaluation and approval may be used only for projects where the FHWA Division Administrator, in accordance with this evaluation, ensures that the proposed action includes all possible planning to minimize harm. This has occurred when:

1. For bridges that are to be rehabilitated, the historic integrity of the bridge is preserved, to the greatest extent possible, consistent with unavoidable transportation needs, safety, and load requirements;
2. For bridges that are to be rehabilitated to the point that the historic integrity is affected or that are to be moved or demolished, the FHWA ensures that, in accordance with the Historic American Engineering Record (HAER) standards, or other suitable means developed through consultation, fully adequate records are made of the bridge;
3. For bridges that are to be replaced, the existing bridge is made available for an alternative use, provided a responsible party agrees to maintain and preserve the bridge; and
4. For bridges that are adversely affected, agreement among the SHPO, ACHP, and FHWA is reached through the Section 106 process of the NHPA on measures to minimize harm and those measures are incorporated into the project. This programmatic Section 4(f) evaluation does not apply to projects where such an agreement cannot be reached.

Procedures

This programmatic Section 4(f) evaluation applies only when the FHWA Division Administrator:

1. Determines that the project meets the applicability criteria set forth above;
2. Determines that all of the alternatives set forth in the Findings section have been fully evaluated;
3. Determines that use of the findings in this document that there are no feasible and prudent alternatives to the use of the historic bridge is clearly applicable;
4. Determines that the project complies with the Measures to Minimize Harm section of this document;
5. Assures that implementation of the measures to minimize harm is completed; and
6. Documents the project file that the programmatic Section 4(f) evaluation applies to the project on which it is to be used.

Coordination

Pursuant to Section 4(f), this statement has been coordinated with the Departments of the Interior, Agriculture, and Housing and Urban Development.

Issued on: July 5, 1983 Approved: /Original Signed By/ Ali F. Sevin, Director Office of Environmental Policy
Federal Highway Administration

APPENDIX D: Public Involvement



Montana Department
of Transportation

PO Box 201001
Helena, MT 59620-1001

Judy Martz, Governor

FOR IMMEDIATE RELEASE

May 23, 2001

For further information, contact:

Jason Giard, (406) 494-9600 or
John Robinson, (406) 444-9415

The Montana Department of Transportation is conducting a public meeting to discuss reconstruction of a portion of Montana Highway 287 between Townsend, Montana and Toston, Montana in Broadwater County.

The meeting will be held at 7pm, Thursday, June 28, 2001 at the Townsend High School, Community Room, 201 North Spruce Street, Townsend, Montana.

The proposed project includes reconstruction, widening, and paving of the two-lane highway beginning at the Townsend Urban Limits on the south side of Townsend, extending south approximately 8.2 miles to just north of the Missouri River Bridge at Toston. For safety, a two-way left turn lane will be constructed beginning at the Townsend Urban Limits extending south approximately 2.5 miles. At the south end of the project, passing lanes will also be constructed. Intersections of county roads will be constructed to approach the highway at 90 degrees for improved sight distance.

New right of way and utility relocation will be required, and traffic will be maintained during construction activities throughout the project.

For more information or to comment on this proposal please contact Jason Giard, District Administrator, PO Box 3068, Butte MT 59702-3068, phone (406) 494-9600 or (800) 261-6909. To arrange special accommodations for persons with disabilities, call MDT at (800) 261-6909 or (800) 335-7592.

-----END-----

NH-F 8-4(16)78
Townsend-South
CN1420

MDT
Public
Meeting

Hear.

The Montana Department of Transportation (MDT) invites you to a public meeting to discuss reconstruction of a portion of Montana Highway 287 between Townsend, Montana and Toston, Montana in Broadwater County.

The proposed project includes reconstruction, widening, and paving of the two-lane highway beginning at the Townsend Urban Limits on the south side of Townsend, extending south approximately 8.2 miles to just north of the Missouri River Bridge at Toston.

For safety, a two-way left turn lane will be constructed beginning at the Townsend Urban Limits extending south approximately 2.5 miles. Intersections of county roads will be constructed to approach the highway at 90 degrees for improved sight distance. At the south end of the project, passing lanes will also be constructed.

New right of way and utility relocation will be required, and traffic will be maintained during construction activities throughout the project.

Be Heard.

Your comments and concerns are a very important part of the process. We invite you to attend to voice suggestions and present pertinent information about the project. For more information or to arrange special accommodations for disabilities please call MDT at (800) 261-6909, or TTY (800) 335-7592.

7 pm, Thursday, June 28
Townsend High School,
Community Room
201 North Spruce Street
Townsend, Montana

APPENDIX E: Comparison of Location Alternatives Considered

COMPARISON OF LOCATION ALTERNATIVES FOR THE TOWNSEND-SOUTH EA PROJECT NH-F 8-4(16) 78; CN 1420

1. Potential Alignments West of the River

Agencies involved in this project have suggested that U.S. Highway 287 south of Townsend should be constructed on a new location west of the Missouri River. The reasons for such an alignment shift are to avoid wetlands impacts within the existing Townsend-South project corridor and to address concerns with the present alignment and narrow bridge over the Missouri River at Toston. As part of the alternatives development process for the EA, two options for routing U.S. Highway 287 west of the river were investigated. The preliminary alignment concepts were developed based on the following assumptions:

- **Shifting the alignment of Highway 287 to the west side of the Missouri River and back to the existing alignment within the limits of the Townsend-South project would not be an environmental or economically sound action.** Such an alignment would require bridges over the Missouri River and overpasses over the Montana Rail Link rail line. This would mean there would be four bridges over the Missouri between Toston and the north edge of Townsend. Such an alignment would require extensive highway construction within the floodplain and has a high potential for disturbing previously disturbed wetland areas.
- **A western alignment needs to begin at a location Highway 12/287 north of Townsend and join the existing alignment of Highway 287 south of Toston.** This assumption was made because no new highway crossings of the Missouri River would be required in the Toston or Townsend areas. Such an alignment may also reduce MDT's safety concerns and bridge replacement needs at the existing Missouri River at Toston.
- **There is no need for a direct connection of U.S. Highway 12 with the new alignment of Highway 287 and an acceptable intersection configuration could be developed near the beginning of the new alignment.**
- **Bypassing the Town of Townsend would be acceptable to the community.** This assumption was made for the purposes of this evaluation only and there is no indication that the community of Townsend wishes to be bypassed. According to State law (**60-2-211, M.C.A.**), communities cannot be bypassed without their prior approval as discussed below.

60-2-211. Bypassing of municipalities -- consent of municipal governing body. (1) The department may not construct highway bypasses or highway relocation projects without prior consent of the governing body of an incorporated municipality when the bypasses or projects:

- (a) are not part of the national system of interstate highways built under the National Defense Highway Act; and
- (b) divert motor vehicles from an existing highway route through a municipality incorporated prior to January 1, 1965.

(2) The department shall notify the governing body of the municipality by certified mail that it proposes to bypass the municipality. A contract may not be let or work commenced until the governing body notifies the department of its consent or until the elapse of 60 days after the

notice has been sent by the department to the municipality, whichever first occurs. The failure of the municipality to act and notify the department of its action within the 60-day period is implied consent to the bypass.

(3) Actual consent or refusal to bypass shall be in the form of a resolution duly adopted by a majority of the members of the governing body of the municipality.

(4) The governing body may not withdraw consent once the department has been notified of the consent.

- **The alignments would be constructed to follow existing roads to the extent possible to minimize impacts on adjoining rural residences and agricultural operations.**
- **The existing road would remain in service and become a Secondary Highway with MDT retaining maintenance responsibility.** This assumption was made because the existing highway serves many existing residences and agricultural operations. The 1999 Legislature mandated that MDT assume maintenance responsibility for paved Secondary Highways.

The alignment options developed in the area west of the Missouri River are described below and shown on **FIGURE 4** (in Part 3.0 of the EA):

Option "A" This alignment would depart from the existing alignment about 6.5 miles southwest of Toston. The proposed alignment would follow existing county roads (Hossfeld/Ferrat Lanes and River Road) for about 9 miles before reaching the bluffs west and southwest of Townsend. The alignment would generally follow River Road, an existing road paralleling the Missouri River, and rejoin the existing alignment about 5 miles north of Townsend.

Option "B" The alignment departs from the existing road about 3 miles southwest of Toston at Rauser Lane and continue on a NW-SE alignment to join River Road and the proposed alignment of Option A before reaching the bluffs west and southwest of Townsend. This option attempts to reduce the length of the new alignment by more closely paralleling the course of the Missouri River. It also attempts to skirt the wetland areas presumed to exist within the Indian Creek, Crow Creek-Swamp Creek-Springs Creek drainages.

A detailed summary of **Options A** and **B** and the anticipated environmental consequences of implementing such alignments are presented in **TABLES 1** and **2** the following pages.

TABLE 1: Summary of West Alignment Options

DESIGN CONSIDERATIONS	OPTION "A"	OPTION "B"
Description of Alignment Option	This alignment would depart from the existing alignment about 6.5 miles southwest of Toston. The proposed alignment would follow existing county roads (Hossfeld/Ferrat Lanes and River Road) for about 9 miles before reaching the bluffs west and southwest of Townsend. The alignment would generally follow River Road, an existing road paralleling the Missouri River, and rejoin the existing alignment about 5 miles north of Townsend.	The alignment departs from the existing road about 3 miles southwest of Toston at Rauser Lane and continue on a NW-SE alignment to join River Road and the proposed alignment of Option A before reaching the bluffs west and southwest of Townsend. This option attempts to reduce the length of the new alignment by more closely paralleling the course of the Missouri River. It also attempts to skirt the wetland areas presumed to exist within the Indian Creek, Crow Creek-Swamp Creek-Springs Creek drainage.
Length of New construction for Alignment Option	21.5 miles (34.6 km)	18.6 miles (29.9 km)
Mileage of Existing Highway 287 to be Retained as Secondary (MDT Maintained)	17.7 miles (28.5 km) Includes existing bridges at Townsend and Toston	13.7 miles (22.0 km) Includes existing bridges at Townsend and Toston
Estimated Construction Costs	21.5 miles (34.6 km) X \$1.477 million/mi = \$31.76 million	18.6 miles (29.9 km) X \$1.477 million/mi = \$27.47 million
Estimated New R/W Area	403 acres Areas of BLM and State land are crossed by alignment	386 acres Areas of BLM and State land are crossed by alignment
Estimated New R/W Costs	Assume 25% of needed R/W irrigated land @ \$3000/ac and 75% is grazing, hay, pasture @ \$1250/ac \$678,750	Assume 25% of needed R/W irrigated land @ \$3000/ac and 75% is grazing, hay, pasture @ \$1250/ac \$617,250
Estimated Maintenance Costs Associated with Old Facility	17.7 miles (28.5 km) X \$3600/mi \$63,720/yr	13.7 miles (22.0 km) X \$3600/mi \$49,320/yr

TABLE 1: Summary of West Alignment Options (continued)

DESIGN CONSIDERATIONS	OPTION "A"	OPTION "B"
Advantages of the Alignment	<p>Shifting U.S. Highway 287 to the west side of the Missouri River would eliminate two river crossings on the route. Safety and geometric concerns at the Missouri River bridge at Toston would be eliminated.</p> <p>Direct impacts to wetlands in the Townsend-South corridor would be avoided.</p> <p>May facilitate through movements of traffic on the route since highway users would no longer be required to slow down or stop in Townsend.</p> <p>These options cross notable areas of Bureau of Land Management and State land, particularly in the northern portion of the alignments. Right-of-way costs could be reduced somewhat by the existence of these public lands.</p>	
Disadvantages of the Alignment	<p>Requires the extension of project limits to implement these alignment options.</p> <p>Substantially increases magnitude and scope of highway improvements within the corridor. Project costs would delay MDT's ability to make improvements to U.S. Highway 287. There would be no benefit to traffic on the route offered by stage construction since connections to the existing route would be impossible without bridging the Missouri River. Shifting to the other side of the river would likely commit MDT to undertake one massive and expensive project.</p> <p>Bypasses Townsend. Requires approval of municipality before bypassing Townsend.</p> <p>Required new configuration of intersection for Highways 12 and 287 at north edge of Townsend could present design difficulties due to overall skewed alignment/topography.</p> <p>Excessive new construction required with full corridor width right-of-way acquisition.</p> <p>New construction in areas previously undisturbed by highway.</p> <p>Potential exists for grade problems with new railroad grade separation and transition to existing alignment north of Townsend.</p> <p>Dramatically increases mileage under MDT maintenance responsibility (both new road miles and old road miles).</p>	

TABLE 2: West Alignments – Potential Environmental Effects

ENVIRONMENTAL CONSIDERATIONS	OPTION "A"	OPTION "B"
Landforms, Geology and Soils	Large cuts and fills may be required in bluffs west/southwest of Townsend. The bluffs could also pose geotechnical concerns. Other than length of proposed alignment and its associated disturbance there is little difference in impacts between options.	
Important Farmland	Estimated Conversion of 171 acres	Estimated Conversion of 159 acres
Water Resources and Quality	<p>Constructing U.S. Highway 287 along this alignment would affect Warm Springs, Crow, Swamp, Spring Branch Creeks near its southerly end and Indian Creek near the north end of the alignment.</p> <p>Disturbed areas for the new highway would increase the potential for soil erosion and sediment transport. Due to the increased length of this option, the disturbance area and potential for erosion during construction would be greater than those of option B.</p>	<p>Constructing U.S. Highway 287 along this alignment would affect Warm Springs, Crow, Swamp, Spring Branch Creeks near its southerly end and Indian Creek near the north end of the alignment.</p> <p>Disturbed areas for the new highway would increase the potential for soil erosion and sediment transport.</p>
Floodplain Impacts	Neither alignment would cross delineated floodplains. It is assumed the new road would be built above the floodplain of the Missouri River in the bluffs west and southwest of Townsend.	
Air Quality Impacts	Air quality impacts are not a project concern due to relatively low traffic volumes and the high existing air quality of the project area. No discernable difference between proposed realignment options.	
Impacts to Vegetation	Vegetation clearing and grading for the new highway would increase the potential for soil erosion and sediment transport. Due to its length, the disturbance area and potential for erosion during construction would be greater for Option A than for Option B.	
Impacts to Wetlands	These options would likely encounter notable wetland areas associated with Warm Springs, Crow, Swamp, Spring Branch Creeks and irrigation features near its southerly end. The southern portion of these alignment cross four soils (Fa-Fairdale Silt Loam, Fd-Fluvaquentic Haplaquolls, Tu-Toston Silty Clay Loam, and Va-Villy Silty Clay loam) on the NRCS's hydric soil list for Broadwater County. Option B would appear to cross more of these hydric soil types than Option B.	
Impacts to Threatened or Endangered Wildlife	Reconstructing U.S. Highway 287 on either alignment would not be expected to cause major effects to threatened or endangered species. The difference between these alignment options would be minimal with respect to T/E species.	
Impacts to Wildlife Resources	Highway construction on the proposed alignments would result in the permanent loss of minor amounts of habitat and temporarily displace some species. Overall long-term impacts to wildlife would be expected to be minor, however, since the road would be built through relatively undisturbed areas, the effects on wildlife may initially be somewhat greater than reconstructing within the existing highway corridor.	
Impacts to Fisheries Resources	The new road would cross Crow Creek (Class 3 sport fishery), the Crow Creek Spawning Channel (Class 5). Warm Springs Creek (Class 4) and Indian Creek (Class 5). Roadways would also be built above floodplain and riparian zone of Missouri River.	

TABLE 2: West Alignments – Potential Environmental Effects

ENVIRONMENTAL CONSIDERATIONS	OPTION "A"	OPTION "B"
Land Use Impacts	<p>The proposed alignments would be unlikely to cause major changes in the use of adjoining lands - livestock grazing, hay production, and the cultivation of crops would continue. However, there is a long term potential for the development of new commercial uses (with the approval of local government) in the vicinity of the required new intersection for Highway 287/12 north of Townsend.</p> <p>These options would result in the loss of productive agricultural land and affect associated irrigation systems and operations.</p> <p>These options would require the minor amounts of right-of-way from land from the BLM and State of Montana and change the use of the affected lands (e.g. grazing to right-of-way).</p>	
Right-of-Way and Utility Impacts	<p>Both alignments would require substantial amounts of new right-of-way. Estimates for new right-of-way acquisition ranges from 386 acres (Option B) to more than 403 acres for Option A.</p> <p>These options would require cross the Montana Rail Link line north of Townsend and require a grade separation structure.</p> <p>These options have considerable involvement with irrigation ditches along the southern part of the alignments and would require coordination with ditch companies/owners during design.</p> <p>The alignments would be in close proximity to between 6-10 rural residences with outbuildings. The need for relocating any of these residences is unknown and can't be predicted with any certainty until a preliminary design was done.</p>	
Transportation/Circulation Impacts	<p>These options may facilitate through traffic on the route since highway users would no longer be required to slow down or stop in Townsend. The new road could be built without disruptions to traffic on the existing alignment .</p>	
Social Impacts/Environmental Justice	<p>Neither alignment would have any significant impact on the location, distribution, density or growth rate of the population of Townsend or Broadwater County. No social, income, or ethnic groups would be adversely affected and the alignments would not isolate or divide existing residential areas.</p>	
Economic Impacts	<p>Bypassing Townsend has the potential for causing adverse economic effects to highway-oriented businesses within the community.</p> <p>Due to the magnitude of the required construction, the temporary economic benefits associated with construction in the area and local spending by workers would extend over several years.</p>	
Noise Impacts	<p>Due to the proximity of the new road to some residences along the proposed alignments, noise impacts would be expected. Building on a totally new alignment may be more notable than widening along the existing highway corridor with respect to noise impacts. Residents along the new alignment have not previously been exposed to much noise. Development of a highway where none previously existed would likely represent a major change in noise levels for some receivers near the alignments.</p>	
Hazardous Materials/Substances Impacts	<p>Neither alignment possesses much potential for encountering hazardous waste sites or areas of contamination since they pass primarily through agricultural or vacant lands. The site could encounter lands used for military training in the Limestone Hills National Guard Training Facility.</p>	

TABLE 2: West Alignments – Potential Environmental Effects

ENVIRONMENTAL CONSIDERATIONS	OPTION "A"	OPTION "B"
Impacts to Cultural, Archaeological/Historical Resources	The potential for encountering NRHP-eligible historic or archaeological sites along the alignments is unknown without a detailed cultural resources survey. Based on the results of cultural surveys of the existing corridor, the likelihood of encountering historic farms and archaeological sites along both alignments appears high.	
Section 4(f) Impacts	Neither alignment would affect public parks or recreation sites or wildlife and waterfowl refuges. The potential for encountering NRHP-eligible historic or archaeological sites along the alignments is unknown without a detailed cultural resources survey.	
Impacts to Section 6(f) Lands	No lands acquired or improved with funding administered under the Land and Water Conservation Fund Act would be affected.	
Pedestrian and Bicyclist Facilities	The provision of wider shoulders would improve facilities for pedestrians and bicyclists over those associated with the existing highway.	
Visual Impacts	Large cuts and fills may be required in bluffs west/southwest of Townsend. Such cuts and fills may be visible from other parts of the valley or apparent to river users.	

2. Reconstruct on Alignments East of the Existing Road

U.S. Highway 287 south of Townsend could also be constructed on a new location east of the present road corridor. As a starting point for establishing possible new alignments, it was assumed that a departure from the existing alignment would occur south of Townsend near the beginning of the Townsend-South project. Developing a new highway alignment around the eastern edge of Townsend would require that the road cross the Missouri River and pass through the midst of sensitive wetlands/habitat areas adjoining the south end of Canyon Ferry Reservoir. Therefore, it was assumed that the alignment revisions would occur at a point south of Townsend.

The following assumptions were used to develop possible new alignments east of the present roadway:

- **The key aspect of such an alignment would be to avoid impacts to the delineated wetlands in the existing corridor.** These wetlands generally begin in the vicinity of the Montana Ditch crossing (Sta. 37+20) and continue southward to the Litening Barn Lane/Dry Creek Road area (Sta. 100+00). Few delineated wetlands exist beyond Sta. 100+00 to the project end.
- **Minimizing the length of the departure from the existing alignment is a key design consideration.** Other than avoidance of wetlands there appears to be few reasons for varying from the existing tangent alignment in the project area.
- **Following existing county road corridors would be obvious choices for establishing new alignments.** Litening Barn Lane and Flynn Lane present good opportunities for developing new alignments east of the existing road corridor. Both roads offer the ability for connections to the existing highway to be made within (or very near) the Townsend-South project limits.
- **The alignments would be constructed to follow existing roads to the extent possible to minimize impacts on adjoining rural residences and agricultural operations.**
- **The present road would remain in service and become a Secondary Highway with MDT retaining maintenance responsibility.** This assumption was made because the existing highway serves many existing residences and agricultural operations. The 1999 Legislature mandated that MDT assume maintenance responsibility for paved Secondary Highways.

Three alignment options were developed in the area east of the existing highway. These options were identified as:

- Option "C"** This alignment would depart from the existing alignment at the south edge of Townsend and proceed southeast before turning south to follow Litening Barn Lane. The new alignment would rejoin the existing alignment about 5.5 miles south of Townsend. The intent of the alignment is to minimize the departure from the existing alignment but still avoid the concentration of wetlands located between the Montana Ditch and Dry Creek.

Option "D" This alignment would depart from the existing alignment at the south edge of Townsend and proceed southeast before turning south to follow Flynn Lane. The new alignment would rejoin the existing alignment just south of the end of the proposed Townsend-South project.

Option "E" This alignment would depart from the existing alignment at the south edge of Townsend and proceed southeast to the eastern edge of the foothills bench of the valley and then turn due south. A long curve would turn the alignment to the southwest providing a long tangent connection to the existing highway south of the Missouri River bridge at Toston. The new alignment would rejoin the existing alignment about 0.5 miles south of bridge at Toston. The alignment would require the replacement of the Missouri River bridge at Toston.

These options are shown on **FIGURE 4** (in Part 3.0 of the EA):

A detailed summary of **Options A** and **B** and the anticipated environmental consequences of implementing such alignments are presented in **TABLES 3** and **4**.

Assumptions for cost estimates

1. Assumed an average cost figure of \$1.477 million/mile for new road construction. This is based on a 1999 preliminary estimate for old Townsend-Toston project of 10.5 million for the project. The average cost/mile figure assumes minor structures are included. The 1999 cost \$1.3125 million/mile was factored up to 2003 costs by assuming a 3% annual inflation rate.

$$\$1.3125 \text{ million/mile} \times 1.03^4 = \underline{\$1.4772 \text{ million/mile}}$$

This cost is further verified by a recent Benefit-Cost analysis completed for the US 2 Havre-Fort Belknap EIS. This analysis examined the costs (and benefits) of upgrading 44.9 miles of a similar highway facility in similar terrain with an improved two-lane road, an improved two-lane with passing lanes, and undivided and divided four-lane options. The cost per mile estimates for these alternatives ranged from \$1.4008 million/mi (improved two-lane), \$1.4788 million/mi (improved two-lane with passing lanes), to \$1.8953 million/mi (for an undivided four lane).

2. Bridge cost estimated to be \$90 per square foot for new structure at Toston. The area of the structure was assumed to be 700 feet X 50 feet. It was assumed a two-lane structure accommodating a 44-foot wide road would be provided at this crossing. Applies only to Option E.
3. It is assumed that portions of the old highway no longer needed would become a secondary route and would be maintained by MDT. Maintenance costs were estimated based on other recent costs obtained from MDT for Secondary Highway (S-540 in Park County). Annual maintenance work (including snowplowing and sanding) was estimated at about \$3,600/mile for 32 miles of S-540.
4. Right-of-way costs were estimated based on a review of recent listings on a Townsend real estate firm's website. An average cost per acre figure of \$3000/acre was identified for irrigated cropland and \$1250 /acre for grazing, hay, and general agricultural land. Assumptions as to the amount of R/W needed from irrigated land were developed from a review of an agricultural land use map obtained from the Montana NRIS website.
5. Right-of-way needs were estimated by assuming an average new R/W corridor width of 200 feet through undeveloped areas, a net new R/W area of 140 feet in areas where county roads already exist, and an additional 60 feet of R/W being needed along the existing highway.

TABLE 3: Summary of East Alignment Options

DESIGN CONSIDERATIONS	OPTION "C" (LIGHTNING BARN LANE)	OPTION "D" (FLYNN LANE)	OPTION "E" (EAST BENCH)
Description of Alignment Option	This alignment would depart from the existing alignment at the south edge of Townsend and proceed southeast before turning south to follow Lightning Barn Lane. The new alignment would rejoin the existing alignment about 5.5 miles south of Townsend. The intent of the alignment is to minimize the departure from the existing alignment but still avoid the concentration of wetlands located between the Montana Ditch and Dry Creek.	This alignment would depart from the existing alignment at the south edge of Townsend and proceed southeast before turning south to follow Flynn Lane. The new alignment would rejoin the existing alignment just south of the end of the proposed Townsend-South project.	This alignment would depart from the existing alignment at the south edge of Townsend and proceed southeast to the eastern edge of the foothills bench of the valley and then turn due south. A long curve would turn the alignment to the southwest providing a long tangent connection to the existing highway south of the Missouri River bridge at Toston. The new alignment would rejoin the existing alignment about 0.5 miles south of bridge at Toston. The alignment would require the replacement of the Missouri River bridge at Toston.
Length of New construction for Alignment Option	9.3 miles (15.0 km) Includes 6.5 miles on new alignment plus 2.8 miles of reconstruction on existing alignment	10.0 miles (16.1 km)	11.8 miles (19.0 km) Includes replacement of Missouri River bridge at Toston and about 0.5 miles of reconstruction on existing alignment on south approach to bridge
Mileage of Existing Highway 287 to be Retained as Secondary (MDT Maintained)	5.5 miles (8.9 km)	8.3 miles (13.4 km)	9.5 miles (15.3 km) New connection required to Toston community
Estimated Construction Costs	9.3 miles X \$1.477 million/mi = \$13.74 million	10.0 miles X \$1.477 million/mi = \$14.77 million	11.8 miles X \$1.477 million/mi = \$17.43 million + 3.15 million (bridge) \$21.21 million
Estimated New R/W Area	171 acres	210 acres	281 acres
Estimated New R/W Costs	Assume 95% new R/W irrigated @ \$3000/ac and remainder @ \$1250/ac \$486,750	Assume 95% new R/W irrigated \$612,900	Assume 70% new R/W irrigated \$696,000
Estimated Annual Maintenance Costs Associated with Old Facility	5.5 miles X \$3600/mi = \$18,000/yr	8.3 miles X \$3600/mi = \$29,880/yr	9.5 miles X \$3600/mi = \$34,200/yr

TABLE 3: Summary of East Alignment Options (Continued)

DESIGN CONSIDERATIONS	OPTION "C" (LIGHTNING BARN LANE)	OPTION "D" (FLYNN LANE)	OPTION "E" (EAST BENCH)
Advantages of the Alignment	<p>The proposed alignment minimizes the departure from the existing alignment and stays within beginning and end points of Townsend-South project.</p> <p>Does not bypass Townsend.</p> <p>Follows an existing road (Lightning Barn Lane) for portion of alignment - could incorporate some existing R/W.</p> <p>Avoids the concentrated area of wetlands along the existing highway in Townsend-South project area.</p> <p>Does not preclude any alignment options for future Missouri River bridge project at Toston.</p>	<p>Follows an existing road (Flynn Lane) for about half of the new alignment - could incorporate some existing R/W.</p> <p>Does not bypass Townsend.</p> <p>Avoids the concentrated area of wetlands along the existing highway in Townsend-South project area.</p> <p>Does not preclude any alignment options for future Missouri River bridge project at Toston.</p>	<p>Locates road to east bench of valley and avoids agricultural uses over most of the southern half of its length.</p> <p>Does not bypass Townsend.</p> <p>Avoids the concentrated area of wetlands along the existing highway in Townsend-South project area.</p> <p>A tangent alignment across Missouri River at Toston would be developed providing a major improvement over the existing condition.</p>
Disadvantages of the Alignment	<p>1.3 miles longer than existing route between Townsend and project end.</p> <p>Requires a portion of existing route to remain in service as Secondary Highway and provide access to adjoining uses.</p> <p>Requires development of new highway corridor through an area where such facilities have not previously existed.</p> <p>Higher construction and maintenance costs that rebuilding on or near existing alignment.</p>	<p>1.5 miles longer than existing route between Townsend and project end.</p> <p>Requires all of existing route to remain in service as Secondary Highway and provide access to adjoining uses.</p> <p>Involvement with irrigation canals/ditches.</p> <p>Higher construction and maintenance costs that rebuilding on or near existing alignment.</p>	<p>1.3 miles longer than existing route between Townsend and Toston south of bridge (MP 78.1 to 88.6).</p> <p>Requires extension of project limits and replacement of Missouri River bridge at Toston to implement this option.</p> <p>Requires all of existing route to remain in service as Secondary Highway and provide access to adjoining uses. New connection from old highway north of river into Toston required.</p> <p>Involvement with irrigation canals/ditches.</p> <p>Highest construction and maintenance costs of east alignment options.</p>

TABLE 4: East Alignments – Potential Environmental Effects

ENVIRONMENTAL CONSIDERATIONS	OPTION "C" (LIGHTNING BARN LANE)	OPTION "D" (FLYNN LANE)	OPTION "E" (EAST BENCH)
Landforms, Geology and Soils	The new road would be constructed across relatively level terrain associated with the Missouri River valley. Other than length of the proposed alignments and their associated disturbance areas there is little difference in impacts between options.		Highway would encounter steeper terrain associated with foothills northeast of Toston. Larger cuts/fills than other east of road options.
Important Farmland	Estimated Conversion of 100 acres of prime or important farmland to R/W	Estimated Conversion of 133 acres of prime or important farmland to R/W	Estimated Conversion of 145 acres of prime or important farmland to R/W
Water Resources and Quality	<p>Constructing U.S. Highway 287 along these alignments would affect Deep, Greyson, and Dry Creeks. These streams are also crossed by the existing highway.</p> <p>Disturbed areas for the new highway would increase the potential for soil erosion and sediment transport. The disturbance area and potential for erosion during construction would be greater for Options D than for Option C.</p>		<p>Constructing U.S. Highway 287 along this alignment would affect Deep, Greyson, Dry, and Sixmile Creeks and cross the Missouri River.</p> <p>Disturbed areas for the new highway would increase the potential for soil erosion and sediment transport. Due to the increased length of this option, the disturbance area and potential for erosion during construction would be greater than those of Options C or D.</p>
Floodplain Impacts	These options would cross the delineated floodplain associated with Deep Creek.		This option would cross the delineated floodplains associated with Deep Creek and the Missouri River at Toston.
Air Quality Impacts	Air quality impacts are not a project concern due to low traffic volumes and the high existing air quality of the project area. No discernable difference with proposed realignments.		
Impacts to Vegetation	<p>Vegetation clearing and grading for the new highway would increase the potential for soil erosion and sediment transport. Due to variations in length, the disturbance area and potential for erosion during construction would be greater for Options D and E.</p> <p>The alignments would avoid a known population of Ute ladies' tresses located along existing road.</p>		
Impacts to Wetlands	These alignments would encounter wetlands associated with Deep, Greyson, Dry, and Sixmile Creeks (Option E only). Additionally, these alignments cross several soils (Fa-Fairdale Silt Loam, Tu-Toston Silty Clay Loam, and Va or Vd-Villy Silty Clay loam) on the NRCS's hydric soil list for Broadwater County. These potentially hydric soils occurs on the portion of the alignment southeast of Townsend common to Options C, D and E.		
Impacts to Threatened or Endangered Wildlife	Reconstructing U.S. Highway 287 on these alignments would not be expected to cause major effects to threatened or endangered species. The difference between these alignment options would be minimal with respect to T/E species. The Missouri River provides habitat and nesting opportunities for bald eagles. Possible effects would be less for alignments located farthest away from the river corridor.		

TABLE 4: East Alignments – Potential Environmental Effects

ENVIRONMENTAL CONSIDERATIONS	OPTION "C" (LIGHTNING BARN LANE)	OPTION "D" (FLYNN LANE)	OPTION "E" (EAST BENCH)
Impacts to Wildlife Resources	Highway construction on the proposed alignments would result in the permanent loss of minor amounts of habitat and temporarily displace some species. Overall long-term impacts to wildlife would be expected to be minor, however, since the road would be built through relatively undisturbed areas, the effects on wildlife may initially be somewhat greater than reconstructing within the existing highway corridor.		
Impacts to Fisheries Resources	This alignment would cross Deep Creek and Greyson Creek. Deep Creek is considered to be Class 4 fishery resource by the MDFWP	This alignment would cross Deep, Greyson, and Dry Creeks. Only Deep Creek has been assigned a fishery resource value (Class 4) by the MDFWP. value, while other streams crossing the proposed project area are not rated.	This alignment would cross Deep, Greyson, Dry, and Six Mile Creeks. Only Deep Creek has been assigned a fishery resource value (Class 4) by the MDFWP. The alignment would also require the construction of a new bridge across the Missouri River at Toston. The Missouri represents a notable sport fishery (Class 1).
Land Use Impacts	<p>The proposed alignments would be unlikely to cause major changes in the use of adjoining lands - livestock grazing, hay production, and the cultivation of crops would continue.</p> <p>These options would result in the loss of productive agricultural land and affect associated irrigation systems and operations.</p> <p>See discussion below concerning effects on rural residences.</p>		
Right-of-Way and Utility Impacts	<p>These alignments would require varying amounts of new right-of-way. Estimates for new right-of-way acquisition ranges from 171 acres for Option C to more than 280 acres for Option E.</p> <p>These options would require cross the large overhead electrical transmission line corridor and likely encounter other utilities along existing roads.</p> <p>These options have considerable involvement with irrigation ditches along the southern part of the alignments and would require coordination with ditch companies/owners during design.</p> <p>The alignments for Options C and D would be in close proximity to about 5-6 rural residences and in one or more cases, may separate residences from outbuildings or livestock feeding/holding areas. The need for relocating any of these residences is unknown and can't be predicted with any certainty without a detailed preliminary design.</p> <p>Option E would appear to have the least impacts on rural residences.</p>		
Transportation/Circulation Impacts	This option would allow traffic to be maintained on a portion of the existing route. Reconstruction of the existing road along a portion of this alignment would cause traffic disruptions during construction activities.	The existing road could remain in service during construction of this alignment.	The existing road could remain in service during construction of this alignment. A new connection from old highway north of river into Toston would be required.

TABLE 4: East Alignments – Potential Environmental Effects

ENVIRONMENTAL CONSIDERATIONS	OPTION "C" (LIGHTNING BARN LANE)	OPTION "D" (FLYNN LANE)	OPTION "E" (EAST BENCH)
Social Impacts/Environmental Justice	None of the alignments would have any significant impact on the location, distribution, density or growth rate of the population of Townsend or Broadwater County. No social, income, or ethnic groups would be adversely affected and the alignments would not isolate or divide existing residential areas.		
Economic Impacts	<p>Right-of-way acquisition for the proposed alignments would remove between 170 and 280 acres of privately owned land from the tax rolls.</p> <p>Temporary economic benefits associated with construction in the area and local spending by workers would extend over two or more construction seasons.</p>		
Noise Impacts	Due to the proximity of the new road to some residences along the proposed alignments noise impacts would be expected. Residents along the new alignment have not previously been exposed to much noise. Development of a highway where none previously existed would likely represent a major change in noise levels for some receivers near the alignments.		Over most of its length, the new road would be built in an area where few residences exist.
Hazardous Materials/Substances Impacts	None of the alignments possess any notable potential for encountering hazardous waste sites or areas of contamination.		
Impacts to Cultural, Archaeological/Historical Resources	The potential for encountering NRHP-eligible historic or archaeological sites along the alignments is unknown without a detailed cultural resources survey. Based on cultural surveys of the existing corridor a high potential exists for encountering historic farms and isolated prehistoric sites.		
Section 4(f) Impacts	Neither alignment would affect public parks or recreation sites or wildlife and waterfowl refuges. The potential for encountering NRHP-eligible historic or archaeological sites along the alignments is unknown without a detailed cultural resources survey.		<p>The alignment would not affect public parks or recreation sites or wildlife and waterfowl refuges. The potential for encountering NRHP-eligible historic or archaeological sites along the alignments is unknown without a detailed cultural resources survey.</p> <p>Construction of a new bridge over the Missouri River could require the use of land from the Toston Fishing Access Site and cause other impacts.</p>
Impacts to Section 6(f) Lands	No lands acquired or improved with funding administered under the Land and Water Conservation Fund Act would be affected.		The possibility exists that the Toston Fishing Access Site was partially funded with LWCF funds.
Pedestrian and Bicyclist Facilities	The provision of wider shoulders would improve facilities for pedestrians and bicyclists over those associated with the existing highway.		

TABLE 4: East Alignments – Potential Environmental Effects

ENVIRONMENTAL CONSIDERATIONS	OPTION "C" (LIGHTNING BARN LANE)	OPTION "D" (FLYNN LANE)	OPTION "E" (EAST BENCH)
Visual Impacts	These alignments would follow existing county roads for about half their length and then cross lands used for irrigated agriculture. In these areas, a highway would be introduced into the landscape for the first time.		Over much of this alignment, a highway would be introduced into the landscape for the first time. Large cuts and fills may be required in bluffs northeast of Toston. The project would require a new crossing of the Missouri River. The new bridge would change the visual environment at Toston.